


American Fruit Grower

WESTERN EDITION

FEBRUARY • 1957



Battle in the Citrus Grove
One-shot Poison Ivy Control
Spray Safety Chart
Two-way Fruit Pest Control
with Systemics
The Fruit Grower Gets a
Tax Break

Secrets of Success in Spraying



*One is a brand-new tire. The other is a
Firestone Factory-Method NEW TREAD!*

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Firestone New Treads mean just what they say. They're new . . . brand new. Your Firestone Farm Tire Specialist can put them on most worn down tire bodies to make them bite down exactly as they did the day you bought them.

You save up to $\frac{1}{2}$ of the new tire price by New Treading your worn tires. But you get the famous Firestone Champion new tire tread made with original equipment

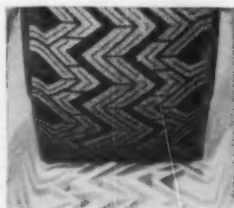
tread rubber. It's permanently put on . . . it's there to stay.

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Call your Firestone Dealer or Store now for new tires or fast retread service. Did we say retread? We meant New Tread!

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Firestone Town & Country® Tires for cars and Firestone Super All Traction Tires for trucks are greatest mud, snow and ice tires ever built!



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WHAT MAKES THE D2 A *MONEY-MAKING* ORCHARD TRACTOR?

This picture tells the story—look at the hill, the soil, the terraces, the load and you'll see why a CAT* D2 Tractor can earn and save you more money in your orchard!

consider these reasons:

- 1 Stability to work more hillside land, safer:**
Work straight up or operate *around* the steep hills. Center of gravity on the wide gauge D2 is only 22 inches from the ground—approximately one foot lower than most wheel-type machines.
- 2 Traction to get your work done faster:** The Cat D2 Tractor has almost 4 times as much surface gripping the ground as most wheel-type orchard tractors to work up juicy, wet slopes or to float through sand or mud, and to operate smoothly over rough ground.
- 3 Power for fewer passes and bigger loads:**
The D2 pulls a maximum of 8,120 lb.—approximately twice as much as most orchard wheel-type tractors. Here's abundant power to pull heavy sprayers, handle big carts, fruit skids, or tillage equipment.
- 4 Maneuverability for short turns:** The D2 turns in a 76" radius and easily maneuvers while pulling big, wide loads. It stands only 62" high and 67" wide, without high wheels that damage fruit and trees.

5 Constant running power take-off: Eliminates engine on sprayer, delivers power to drawn equipment at constant RPM. Operator stops forward motion of Caterpillar D2 Tractor by pulling back on both steering clutches, power take-off continues to run.

6 Diesel economy: D2 burns low-cost, power-rich No. 2 furnace oil which may save an orchardist \$500 a year if his present gas bill is \$750 to \$1000.

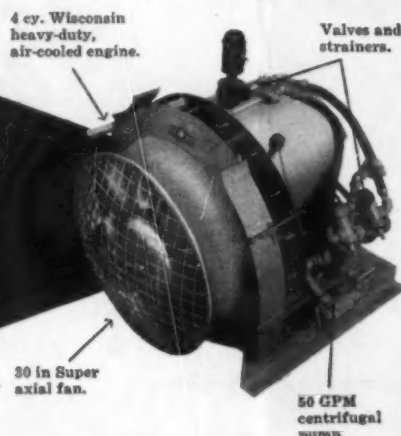
Have your Caterpillar Dealer point out the many other ways a Cat Diesel Tractor will earn and save you more money and help you do a better job! *And write us for your free copy of "Soil & Water Conservation," Dept. AMF27, Caterpillar Tractor Co., Peoria, Ill., U.S.A.*

CATERPILLAR*

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**HAVE YOUR DEALER
MAKE A FREE ANALYSIS
OF YOUR ORCHARD POWER NEEDS**

BUILD YOUR OWN AIR-BLAST SPRAYER



Save \$1,000— with Bes-Spray 'Power Package'

'Power Package' is a complete air-blast sprayer (less tank and trailer) —4 cy. Wisconsin heavy-duty, air-cooled engine; 30 in. super axial fan; 50 GPM centrifugal pump; valves and strainers; and agitator sprocket. It's the same fan, pump, engine, valves and strainers built for the famous Bes-Spray model 450 the past three years.

Save hundreds of dollars this Spring*... just attach the Bes-Spray 'Power Package' to any of the following:

- a tank and trailer built to your own specs by your local welding shop,
- a good used sprayer tank and trailer,
- an old pick-up truck,
- your own rig—built in your barn!

*Only \$1,695 f.o.b. Oakland—slightly higher from key dealer and warehouse stocks in principal fruit-growing areas of Midwest and East.

The
Powerful New
SUPER
BES-SPRAY
Model 580
for 1957



More Air ... More Horsepower ... Bigger Fans

New, powerful Ford engines (Heavy-duty 4's, 6's, and V-8's) and bigger fans give the big new BES-SPRAY faster coverage, more air volume at lower engine speeds... greater economy! Some models can be equipped with air-cooled engines.

6 New Models

...from 200 to 500 gal. tanks ...from 20 to 80 gal. per min.
...plus protective coated tanks

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Emeryville, Oakland 8, Calif.

Send complete information on:

- ☐ 'Power Package' ☐ New Bes-Spray

Name _____

Address _____

Free design for building 400-gal. spray unit with purchase of Power Package.

American Fruit Grower

REG. U. S. PAT. OFF.

The Only National Fruit Publication

Vol. 77 FEBRUARY, 1957 No. 2

FEATURED IN THIS ISSUE

Cover photograph of grapefruit is by Harry Vroman. Grapefruit production for 1956-57 is estimated by the USDA at 42.3 million boxes—3% less than last year. The Florida crop of 35 million boxes is down almost 3 million boxes from last year. Texas with 3.5 million boxes and Arizona with 3 million boxes are up slightly from last year.

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AMERICAN FRUIT GROWER

LETTERS TO THE EDITOR

Questions French Hybrid Story

Dear Editor:

I have just read the article on French hybrids in the October number and I must say that according to my information it is incorrect.

It is my understanding that T. V. Munson's contribution to the reconstitution of French vineyards was mostly limited to furnishing vines indigenous to this country which were not only resistant to phylloxera but also to calcareous soils.

As for naming these "new" grapes French-American hybrids, I understand that the name French hybrid comes not from the varieties of grapes used in these crosses but rather from those who have created them, i.e., the French hybridizers.
Oklahoma City, Okla. Earl T. Johnston

Blueberries for TV Enjoyment

Dear Editor:

A fruit store proprietor in Rochester, N. H., reported that a customer who had purchased a basket of cultivated blueberries called back by phone after a half hour and asked to have two more baskets set aside for her use over the weekend. She had been watching a favorite program on television and had found incidentally the ideal fruit for her enjoyment. The large, crisp, highly-flavored berries were just convenient bite size!

Durham, N. H. E. M. Meader
Reader Meader, associate horticulturist at the University of New Hampshire, has a sales promotion idea here. Blueberry growers, take notice!—Ed.

Quality Avocados and Limes

Dear Editor:

Last fall you published an excellent article by a supermarket executive which made quite clear what the supermarket and the customer expected and demanded in the way of quality fruit from the grower.

Our Council feels that the salient points of this article should be brought to the attention of local growers of avocados and limes.

Would you be kind enough to furnish us with a copy of this article and give us permission to distribute copies thereof to the growers.

I, personally, enjoy your magazine and am impressed with the way in which you stress the need for quality and the beneficial results to be obtained therefrom.

Goulds, Fla. Charles F. Ivins
The Avocado and Lime Growers' Council

The wider the distribution of this article the better.—Ed.

Pruning Delicious

Dear Editor:

I have grown and helped grow 10,000 Delicious apple trees, counting replants, within the last 43 years.

Of the Delicious trees I have observed, the one with the best crotches, in fact, perfect, and not grown that way by design, has a body in the form of a modified shepherd's crook with the limbs forming on the sides and upper surface. What is ordinarily the top becomes one of the side limbs. This form of tree attains a balance and finally occupies no more than its allotted space.
Galesville, Wis. Fred Sacia

FEBRUARY, 1957

Phix^{*} THE ANSWER TO YOUR SCAB PROBLEM

HOW MUCH of your profit will you let apple scab take? It can take it all, if you let it.

That's why this year again, thousands of apple growers all over the country are choosing PHIX—the effective and mild organic mercury fungicide which kills scab spores quickly and thoroughly.

GROWERS LIKE PHIX because it is a dry material which is easier and more convenient to use, to store, and to handle; because PHIX has indefinite shelf life; because PHIX is the most economical eradicator fungicide you can get—whether you use mercury in an eradicator or in a protective schedule; because PHIX has been shown to have these advantages in practical use by leading and successful commercial orchardists as well as by leading agricultural experiment stations.

GET

Phix

for the
BEST in

EFFECTIVENESS
EASE
EFFICIENCY
ECONOMY
CONVENIENCE

Phix is available from most leading
spray chemical suppliers. Insist on **Phix!**

ORDER **Phix** from your dealer early. If he does not yet have **Phix** write, wire, or phone your order to us with your supplier's name.

Write for descriptive folder.

CHEMLEY PRODUCTS COMPANY

5744 N. Western Ave., Chicago 45, Illinois

*Trade Mark Registered



TOP QUALITY

You can pay more

CRAG

GLYODIN SOLUTION

A PROTECTIVE FUNGICIDE FOR THE CONTROL OF SCAB, SOOTY BLOTCH, BROOKS SPOT, BITTER ROT, BLACK ROT AND FLY SPECK OF APPLES, LEAF SPOT OF CHERRIES, BROWN ROT OF PEACHES AND CERTAIN FUNGUS DISEASES OF ORNAMENTALS IN DILUTE OR CONCENTRATE SPRAYS

CRAG

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A PROTECTIVE FUNGICIDE FOR THE CONTROL OF SCAB, SOOTY BLOTCH, BROOKS SPOT, BITTER ROT, BLACK ROT AND FLY SPECK OF APPLES, LEAF SPOT OF CHERRIES, BROWN ROT OF PEACHES AND CERTAIN FUNGUS DISEASES OF ORNAMENTALS IN DILUTE OR CONCENTRATE SPRAYS

ACTIVE INGREDIENT: Glyodin (3,4-dichlorophenyl glyoxalate sodium) 54% by wt. 24% by wt.

CRAG

AGRICULTURAL CHEMICALS

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
50 East 42nd Street New York 17, N.Y.
Producers of CRAG Brand Agricultural Chemicals

BRAND NEW

5, 30, and 54-gallon drums for CRAG Glyodin provide labels that can't tear or come off . . . instructions are always easy to read.

at LOW COST

but you can't buy better control of apple scab!



ALL SEASON PROTECTION

CRAG Glyodin fungicide provides powerful *all season* protection against apple scab when used in early sprays and cover sprays. It also controls summer diseases such as sooty blotch, bitter rot, Brooks spot, fly speck, and black rot. Glyodin is effective against brown rot of peaches interplanted with apples, and cherry leaf spot. For only 75¢ per 100 gallons of early spray and 54¢ per 100 gallons of cover spray, CRAG Glyodin offers unmatched advantages that mean better fruit at lower cost.



HELPS INSECT CONTROL

CRAG Glyodin teams up with insecticides... some insecticides tend to be more effective with Glyodin than with other fungicides. This extra Glyodin advantage has been proved in 13 tests in which 21 different insecticides, miticides, or combinations of the two were used with several fungicides. Comparative results were obtained from tests on codling moth, curculio, green apple aphid, mites (European red, two-spotted, and Schoene), red-banded leaf roller, and rosy apple aphid.



CUTS MITE SPRAY COSTS

CRAG Glyodin saves as much as three miticide sprays a year when used in full-season schedules of early sprays and cover sprays. In one season, a grower saved \$1,166 in special mite sprays because Glyodin kept mites from building up in his orchard. CRAG Glyodin kills both adult mites and nymphs on contact. And, unlike some apple fungicides, it does not harm beneficial insects that feed on mites. CRAG Glyodin cuts mite spray costs!



THE SCAB SPRAY THAT PAYS MORE WAYS

CRAG Glyodin works equally well in dilute or concentrate sprays to provide outstanding protection that helps assure maximum yields of clean fruit with the color and finish the market prefers.

For efficiency and economy, CRAG Glyodin is your best fungicide buy! Plan now to use it all season long. See your supplier... or write for full information.

CARBIDE and CARBON CHEMICALS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street **UCC** New York 17, N. Y.

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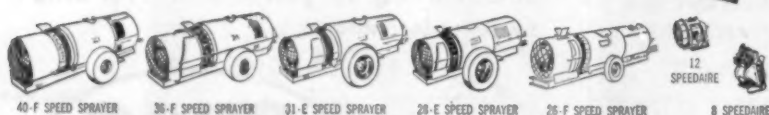
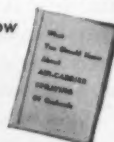


with a 1957 *John* **BEAN** Speed Sprayer

INCREASED CAPACITIES — For 1957, capacities have been increased in John Bean Speed Sprayers to assure you greater "rate of work" performance than ever before. This means greater speed and economy in doing the effective spraying job you need in your particular orchard. You get the deepest, most uniform penetration possible, using either concentrate or dilute applications. The exclusive John Bean air handling design permits you to gain all the advantages of high volume, low velocity air flow . . . controlled to fit your trees, under your specific spraying conditions.

A COMPLETE LINE — From the recognized leader of all orchard sprayers, the Model 40F Speed Sprayer, through the brand new Model 26F shown above, to the rugged Speedaire attachments, this 1957 John Bean line offers you the most complete selection in the field. You're sure to find a John Bean Orchard Sprayer suited exactly to your spraying requirements. See your John Bean Dealer now for a demonstration in your own grove or orchard.

"What You Should Know About AIR-CARRIER SPRAYING OF ORCHARDS" — Write today for your illustrated copy.



THE COMPLETE ORCHARD SPRAYER LINE



John BEAN

LANSING 4, MICHIGAN
SAN JOSE, CALIFORNIA

Division of Food Machinery and Chemical Corporation



Bailey



Hendershott

GOURLEY AWARD WINNERS

WINNERS of the J. H. Gourley medal and cash prize awarded annually by AMERICAN FRUIT GROWER are C. H. Hendershott and Lowell F. Bailey, of the University of Arkansas.

The Gourley award is presented annually for the best paper on fruit growing research delivered before the American Society for Horticultural Science. It commemorates the memory of the late Dr. Gourley, who served for many years as head of the department of horticulture at Ohio State University and editorial advisor of this magazine.

The Arkansas researchers have extracted from peach flower buds a substance that inhibits growth. It is thought that this substance may have some relationship with the annual rest period which causes peach trees to go into a dormant state in winter.

Hendershott and Bailey point out that several attempts have been made in recent years to spray the trees with various materials to delay the emergence from rest period and thus delay bloom past the period of frost danger. However, the majority of these materials have had very little or no influence. It is hoped that a better understanding of what causes the rest period might make it possible to find the substance that would delay bloom.

CALENDAR OF COMING MEETINGS & EXHIBITS

Feb. 5-6—Fruit growers short course, University of Vermont, Burlington.—C. L. Calahan, Ext. Hort., Burlington.

Feb. 5-7—New Hampshire Horticultural Society meeting, Highway Motel, Concord. Feb. 5—fruit program; Feb. 6—vegetable program; Feb. 7—potato program.—Percy D. Colby, Milford.

Feb. 6-8—Ohio State Horticultural Society annual meeting, Netherland-Hilton Hotel, Cincinnati.—C. W. Ellenwood, Sec'y, Wooster.

Feb. 19-20—National Peach Council convention, Whitcomb Hotel, St. Joseph, Mich.—M. J. Dorsey, Sec'y, 1502 S. Lincoln, Urbana, Ill.

Feb. 28—Vermont State Horticultural Society annual fruit conference, Community House, Rutland.—C. L. Calahan, Sec'y, Burlington.

Mar. 4—Southeastern Pecan Growers Association 50th convention, Buena Vista Hotel, Biloxi, Miss.—H. S. Jennings, Sec'y, Dawson, Ga.

Mar. 15—Annual Kentucky Peach Pruning Field meeting, Kentucky Cardinal Orchards, Frank Street, Manager, Henderson.—W. W. Magill, Ext. Hort., Lexington.

AMERICAN FRUIT GROWER

Growers using ORTHOCIDE in an ORTHO program report:

**"BEST SCAB CONTROL"—"INCREASED YIELDS"
AND "BETTER COLORED FRUIT"**



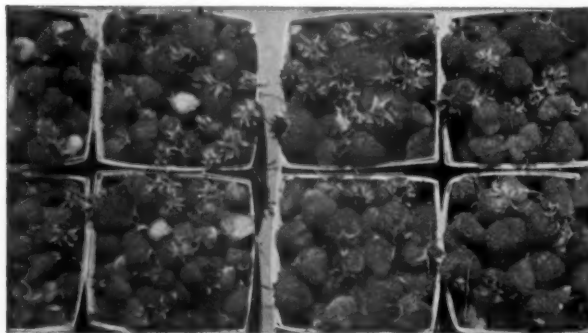
"The finish I have been able to get with the ORTHO program makes up for all the years I struggled along under my old program," says C. M. Miller (above, right) apple grower of Cornelia, Ga. shown with ORTHO Fieldman Neal Youngblood.

"I have been growing apples for 34 years, and this crop is the best one that I have ever raised. Not only is the finish

on this year's crop far superior," reports Mr. Miller, "but I have also found that it is a bigger and better crop in every way than previous years' crops. I judge I will harvest around 200,000 boxes of apples this year against about 70,000 previously. I will pack about 80% of my apples in boxes this year, whereas under the old program I only packed 20 to 30%."

**Use ORTHOCIDE in a complete
ORTHO program for best results**

Only ORTHOCIDE, a superior formulation of captan, made exclusively by its developer, California Spray-Chemical Corp., provides: (1) exceptionally fine particle sizes. (2) better sticking, wetting, and spreading agents. (3) superior carrying agents. (4) compatibility with the full ORTHO line of insecticide and fungicide products.



Maumee, Ohio...It took 86 untreated strawberries (left) to fill a quart box... only 63 of larger ORTHOCIDE-treated berries (right). New Jersey growers report yields and prices of ORTHOCIDE-treated berries up 50% due to control of Botrytis rot, with improved size, firmness, color.



Southern Illinois...These beautiful peaches received a full ORTHO dust program with ORTHOCIDE throughout the growing season. Note the healthy foliage, and the large, perfectly finished fruit, free from rot and insect damage—peaches with consumer appeal!

START YOUR ORTHO® PROGRAM NOW!

Join the growers who report:
 "beautiful smooth finish,"
 "crop 100% clean,"
 "95% U. S. No. 1 Fancy"
 ...due to ORTHOCIDE
 in the ORTHO program!

"I originally used ORTHOCIDE on my sour cherries because of the simplicity of the ORTHO program," says Alfred A. Lockley (right) of Williamson, Wayne Co., New York, shown examining his cherries being delivered to Ellsworth Newton, plant supervisor of Northern Wayne Co-op. "The continued use of ORTHOCIDE since that time has resulted in an improved appearance of my orchard with better yields of better colored fruit," Mr. Lockley says. "This has convinced me that the ORTHO program is not only the easiest to use but the best."



"I have been using ORTHOCIDE for 4 years with excellent scab control and beautiful smooth finish on transparent Jonathan, Stayman, Red Delicious, McIntosh and Cortland," says Albert B. Cole (above) of Meadow Brook Farm, Red Hook, New York. "Yield has been consistently high. Over-all pest control on the ORTHO program has been tops and spraying has been simplified. I greatly value the timely and competent ORTHO field service."



"Had it not been for some hail damage, we could have eliminated our grading this year," reports Gordon Yates, apple grower of La Crescent, Minnesota. "Our crop was commercially 100% clean, thanks to the ORTHO program."



"The ORTHOCIDE Program and ORTHO field service have been very instrumental in producing high yields and fine finish fruit," reports Mr. Walter A. Hoffman of Roseland, Virginia (right), shown with Walter Hoffman, Jr.

ORTHO



ORTHOCIDE (captan) is manufactured internationally and distributed world-wide by its original developer, California Spray-Chemical Corp.

For complete details call your nearest ORTHO Fieldman



California Spray-Chemical Corp. • Executive Offices: Richmond, Calif.; Washington, D.C. • District Offices: Haddonfield, N.J.; Medina, N.Y.; Columbia, S.C.; Orlando, Fla.; Shreveport, La.; Maryland Heights, Mo.; Memphis, Tenn.; Maumee, Ohio; Milwaukie, Ore.; Sacramento, Fresno, San Jose, Whittier, Calif.; Phoenix, Ariz.; Caldwell, Ida.; Springfield, Mass.

T.M.'S REG. U.S. PAT. OFF.: ORTHO, ORTHOCIDE • ON ALL CHEMICALS, READ DIRECTIONS AND CAUTIONS BEFORE USE.



1. YOUR CHOICE OF FIVE FINE TRANSMISSIONS



2. PERFORMANCE REACHES NEW HIGHS



3. COMMAND POST CONTROL PANEL



4. LOOKS LONGER . . . AND IT IS!



5. HEADLIGHT-HOOD AIR INTAKES



6. NEW SIZE WHEELS AND TIRES



7. DRAMATIC NEW FRONT END DESIGN



1. YOUR CHOICE OF FIVE FINE TRANSMISSIONS

Chevrolet offers a transmission to suit every driver's taste—automatic,* overdrive* and manual.

2. PERFORMANCE REACHES NEW HIGHS

New choice of 5 engines—superb 6 and four silken V8's with up to 245 h.p. Also a special 270-h.p. V8 available at extra cost.

3. COMMAND POST CONTROL PANEL

A deeply hooded cove, directly in front of the driver, houses all instruments, controls and gauges.

4. LOOKS LONGER . . . AND IT IS!

Those longer, lower lines are no illusion. The '57 Chevrolet measures up to them. It is longer, lower—and every inch a beauty!

5. HEADLIGHT-HOOD AIR INTAKES

Here's a smart idea—ventilation air intakes cap the headlights for a new note in styling. And it's clean high-level air, too.

6. NEW SIZE WHEELS AND TIRES

Chevy now has 14-inch wheels, 7.50 x 14 tires. The velvety ride is even softer because air pressure is reduced to a new low of 22 pounds.

7. DRAMATIC NEW FRONT END DESIGN

The front bumper is combined with the grille for new massiveness and uncluttered purity of line.

*Optional at extra cost

THERE'S THE GREATEST CHANGE IN CHEVROLET!



Bold new beauty—the Bel Air Sport Coupe with Body by Fisher.

For '57, Chevrolet comes up with a dramatic new departure in design! Plus new power, new comfort, new nailed-to-the-road stability, new ideas right down to the wheels it rolls on. It's Sweet, Smooth and Sassy!

Chevrolet's great design team has come up with a whole galaxy of sparkling new advances. You can see that a block away, in Chevy's proud new bumper-and-grille front, in the bold flare of its rear fenders, the clean-lined simplicity of its integrated taillight assembly. You can feel the difference, instantly, the moment you nudge the accelerator on any of Chevy's superb new engines. Matter of fact, there's so much that's new and wonderful about this new Chevy you can spend fascinating hours just getting acquainted with 1957's most distinctive car. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

TRACTION for the HEAVY PULLS!



Just pull the Torque Amplifier lever to reduce speed and increase pull-power up to 45 per cent, on-the-go, in any gear. Push lever, full speed again!

1957 International® 350 Utility tractor

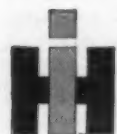


New shielding attachment quickly adapts the new International 350 Utility tractor for work in orchard, vineyard, and grove. Does not interfere with use of Traction-Control Fast-Hitch implements for work in open fields.

Head right up a steep, soft slope! Feel the new International 350 Utility *hang on*, the wheels *hold*, pulling a heavy sprayer. See how up to 1,000 pounds greater built-in weight than other utility tractors gives you ground-hugging traction . . . turns stepped-up engine power into *more pull-power!*

Slow to a crawl for thorough spraying, with either engine or pto-drive sprayer. Pull the Torque Amplifier lever, *on-the-go*, cut speed one-third . . . to as low as 1.8 mph. Push the lever, resume full gear-speed as high as 16.75 mph for fast transport—no shifts, no stops, no spray-pressure drops! *All this, and power steering, too!*

Call your IH dealer. He'll gladly demonstrate! Make your *own* free traction test with the new International 350 Utility! See how it will pay for itself in use, on the IH Income Purchase Plan. *Phone today!*



SEE YOUR

INTERNATIONAL HARVESTER

International Harvester products pay for themselves in use—McCormick Farm Equipment, Farmall and International Tractors . . . Motor Trucks . . . Construction Equipment—General Office, Chicago 1, Illinois.

DEALER

AMERICAN FRUIT GROWER



Insecticide residues presented no problem in 1956 as growers carefully followed spraying recommendations.

Fruit Growers in 1956 Met the Challenge of *Controlling* ORCHARD INSECTS

**Insect control in 1956 was good.
Insect control outlook: optimistic**

By HOWARD BAKER
U. S. Department of Agriculture

HIGHLY effective insecticides used according to recommendations, a light carryover of most orchard pests from 1955, and a cool, late spring over a wide area helped make it possible for most fruit growers to obtain satisfactory insect control in 1956. There were no widespread outbreaks.

The misgivings of many growers as to their ability to obtain good control without exceeding insecticide tolerances were unwarranted. We know of no growers who had difficulty on account of excessive harvest residues in 1956. This was due in large measure to the conscientious manner in which they followed the advice of representatives of state and federal research, extension, and regulatory officials and of industry to follow label recommendations.

The present indications are that insect control should be equally satisfactory to fruit growers in the years immediately ahead. Overwintering populations of most pest spe-

cies are again comparatively low. Except for the continued increase in the resistance of mites to parathion and other phosphorus insecticides, the development of resistance in orchard insects is neither great nor widespread. In addition, tests of many new insecticides in 1956 revealed some that are sufficiently promising to justify further trial.

Despite the widespread use of highly efficient insecticides, some pests caused injury in some orchards in most fruit-producing areas in 1956. This was to be expected. Codling moth damage was below the level of 1955 in most areas, partly because many growers strengthened their programs and partly because of favorable weather. In the Northwest, however, there was a heavy moth flight after the spray season and injury was greater than in recent years.

The two-spotted spider-mite and closely related species were generally well contained in 1956. In most areas where mite control became a problem the European red mite was the dominant species. However, wide

use of spray programs, especially in the prebloom applications, prevented serious damage.

In the Northeast the outstanding news on insect conditions was the report from New York of the appearance of strains of the red-banded leaf roller resistant to TDE. In other areas this pest caused little trouble in 1956.

The apple maggot was moderately abundant in the Northeast and in the northern portion of the midwestern fruit belt, particularly in Wisconsin. The apple aphid was a problem in some orchards in the Northeast and the Cumberland-Shenandoah area, and the rosy and apple grain aphids appeared in numbers in the latter area. The unspotted tentiform leaf miner was less widespread in the Cumberland-Shenandoah area than in 1955, but was still a problem for some growers in that area and appeared in injurious numbers in Illinois and neighboring states.

On pears in the Pacific Northwest the pear leaf blister mite caused considerable damage in bearing or-

(Continued on page 60)

FRUIT DISEASE CONTROL

**The new fungicides gave good control
of fruit diseases in '56—and the
future outlook is even better**



Apple scab (left) and peach leaf curl (right) were more prevalent than usual in the Appalachian area last year due to limited use of fungicides with a light crop in 1955.



Cherry leaf spot (left) has been on the increase in some orchards for the last five years because of inadequate spray coverage. Peach brown rot (right) continues to be a major problem.

By F. H. LEWIS

Pennsylvania State University

THE fruit disease and fungicide situation was generally satisfactory in 1956. In many localities in the Northeast spring rainfall was not favorable for a severe outbreak of apple scab. Some large fruit growing counties had only one or two orchards with as much as 5% disease- and insect-injured fruit.

The widespread use of concentrate sprays speeded up the spray job and cut labor costs. Some of the newer fungicides were much more effective in scab control than the old sulfur fungicides, and their use resulted in higher yields of smoother fruit.

This generally favorable situation gave little satisfaction to some indi-

vidual growers and localities, where old troubles persisted, and others, usually unimportant, became major problems.

Apple Scab—There was an unusually severe outbreak of scab in the southern Appalachian region. Many growers stopped spraying after severe frost injury to the 1955 crop. The scab fungus developed rapidly and lived through the winter at a high population level. Ascospores developed early in 1956 and were discharged under conditions highly favorable for infection. The fungus is still common in many orchards in that area, and 1957 may be like 1956 if another cool, wet spring occurs.

Scab control requires thorough sprays applied at the proper times.

Protectant fungicides, like wettable sulfur, glyodin, and ferbam, must be applied before scab infection periods. Fungicides like mercury, lime-sulfur, dichlone, and captan are effective both before and for a short time after the start of a scab infection period. They may be extremely valuable where sprays cannot be timed accurately.

Apple Mildew—This disease has long been a problem in the western states and has now become established in some eastern orchards, especially on the varieties Rome Beauty, Jonathan, Stayman, Cortland, Baldwin. The problem developed in eastern orchards after the use of sulfur was discontinued or greatly reduced. None of the newer fungicides now used for scab control is as effective as sulfur in mildew control. Therefore, mildew has developed without much chemical interference.

Sulfur and 2-(1-methylheptyl)-4,6-dinitrophenyl crotonate (sold as Karathane or Mildex) are the only two reasonably safe and effective mildew fungicides available to us. Sulfur is least likely to cause injury when used early in the season in relatively cool weather. It has caused severe yield reduction on some varieties like Stayman, and is not safe in the summer when temperatures may be 90° F. or more. Karathane has given satisfactory results in some cases where sulfur was unsuitable. It has been safer than sulfur in hot weather, and can be combined with captan and other materials now used in spray programs aimed at the production of fancy fruit. It has caused fruit russetting when combined with EPN or malathion insecticides in the early-season sprays.

One of the interesting discoveries of 1956 was the finding that Systox was partially effective in mildew control. It was most effective when combined with lead arsenate in the sprays applied soon after petal fall. Results were generally poor on heavily infected mature leaves.

Many growers will use sulfur in the early-season sprays followed at petal fall or later by captan, glyodin, or ferbam for scab control, with Karathane added as needed for mildew control. Recommendations will vary on the amount of sulfur to be used and whether it is to be used alone or in combination with other fungicides. Mixtures of sulfur with captan, glyodin, or dichlone may be useful in prebloom sprays. We have had injury when used after bloom.

Sooty Blotch and Fly Speck of Apples—These diseases appeared late in the 1955 season in many orchards. (Continued on page 54)



A bulldozer (above) piles citrus trees infested with burrowing nematode preparatory for burning (right). Soil where trees formerly stood is then treated with D-D soil fumigant at 60 to 66 gallons per acre.



BATTLE ... in the CITRUS GROVE

Florida growers marshal all forces to control spreading decline caused by burrowing nematode

By H. L. JONES
State Plant Board of Florida

FLORIDA'S vast citrus industry is boldly facing the most serious threat it has yet encountered. With more than a half-million acres of citrus at stake, a billion-dollar industry has armed itself with a control program of a magnitude heretofore unknown.

The necessity of such a program was brought about because of a condition known as "spreading decline" of citrus, caused by minute eel-like worms, known as burrowing nematodes, *Radopholus similis*. The worms, about 1/50 of an inch long at maturity, burrow into and feed on the cell juices of the tender cortex tissues of rootlets.

The females burrow into the fine roots and lay their eggs in the rootlet tissues. When the young hatch, they find an immediate food supply. As the food diminishes and the root deteriorates, the nematodes leave their dilapidated home in search of new luscious feeder roots.

It is not known just how far a burrowing nematode can travel during the migratory phases of his life; however, an infested area generally spreads in all directions at an average of about 50 feet per year where satisfactory hosts are conveniently

located, such as exists in the middle of a citrus grove.

Unlike many serious plant pests, the burrowing nematode has not been known to actually kill a citrus tree in Florida. It generally destroys the feeder root system below one



A grapefruit grove infested with the burrowing nematode, showing typical symptoms of "spreading decline" condition.

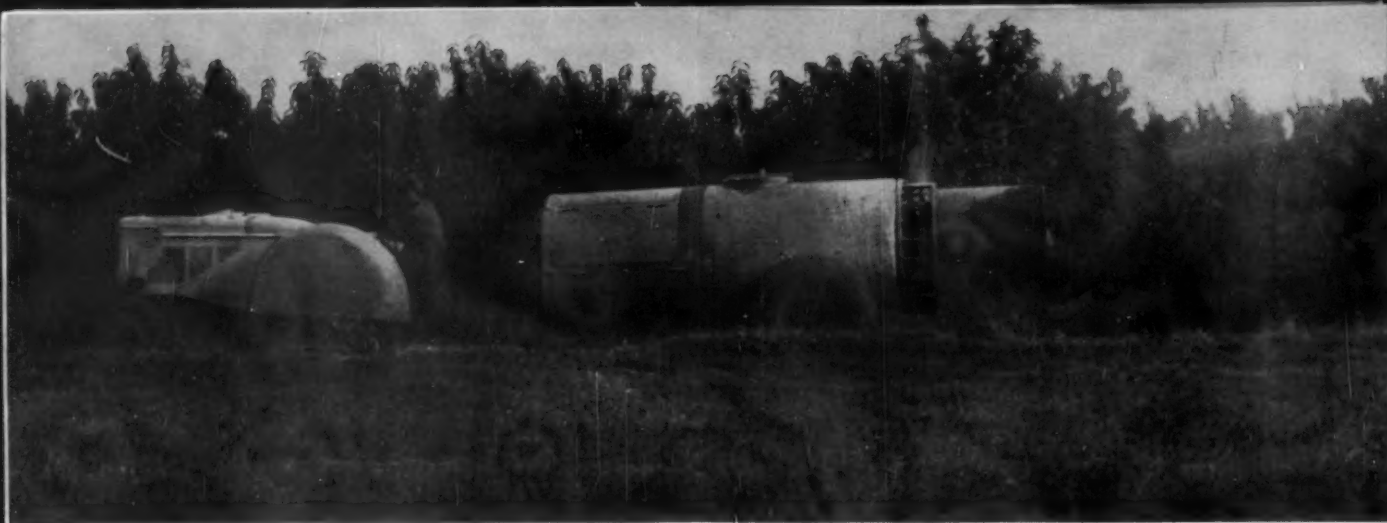
Florida State Plant Board inspectors collecting root samples for burrowing nematode determinations in laboratory.

foot in depth, leaving the roots near the surface unmolested and with the livelihood of the top, such as it is, depending on those few healthy roots. Apparently the temperature in the first foot of soil reaches heights that prevent burrowing nematodes from perpetuating generations there. Laboratory tests prove that this nematode cannot withstand much heat.

In spite of the profuse use of fertilizer, the trees will die back, be-

come sparse of foliage, develop poor color, and wilt under even the slightest dry weather conditions, thus losing most of their fruit. The few fruits produced are small, but the quality is satisfactory.

Irrigation, to a limited extent, will help the condition of the trees, but they must be watered almost constantly. This causes the fertilizer to leach rapidly through the porous Florida sandy soils; therefore,
(Continued on page 50)



Spraying Georgia peach orchard with parathion.

Secrets of Success in FRUIT PEST CONTROL

**Grower experiences in spraying and dusting
point the way to production of perfect fruit**

THOROUGHNESS IS AIM IN GEORGIA

By E. F. SAVAGE

Georgia Agricultural Experiment Station

THE changes in spraying practices which we have seen during the past 10 years in the Georgia peach belt are only a little short of remarkable.

In 1946 plum curculio was out of control; growers suffered severe losses. Then came the age of organic insecticides and wide acceptance of blower-type sprayers.

Parathion proved to be the answer to most of the peach insect problems. It not only took care of the plum curculio and the oriental fruit moth, but it also could be used against scale insects and the peach tree borer. In reserve we had dieldrin that could be used during the first sprays against plum curculio if this insect should develop resistance to parathion. With the insect problem solved, we thought we could rest easily for a period. This was not to be the case.

With widespread use of the new organic insecticides, peach scab, or frog-eye as it is called by many growers, rapidly became one of the major diseases of the entire Georgia peach

area. That was a real puzzler because when the old lead arsenate spray schedule was used, peach scab was so rare that its discovery in an orchard was news. Now we had many peaches made unsalable by this disease.

Trees sprayed with the old lead arsenate schedule, which included zinc sulfate, spray lime, and sulfur in addition to the lead arsenate, were free of scab. Adjacent plots in which the spray schedule was one of the organic insecticides plus wettable sulfur were riddled with scab.

In 1954 we tried out the various ingredients of the lead arsenate program separately. None of these worked singly, but again the combination of ingredients gave near-perfect control. We decided that the combination of materials in the lead arsenate schedule must in some way seal the sulfur fungicide so that it did not wash off easily in heavy rains. When the organic insecticide plus sulfur sprays were used, the sulfur fungicide was easily washed off.

In February, 1956, I was attending the National Peach Council Meeting at Cairo, Ill. One night Frank T. Street of Henderson, Ky., one of the country's better peach growers, sat down beside me and said, "So you are having trouble with peach scab in
(Continued on page 42)

DIXIE ORCHARDS USE SPRAY-DUST PROGRAM

By ELDON S. BANTA

"OUR market demands perfect fruit, so it's up to us to try and produce it." That is the way Mark Byers, manager of the Dixie Orchard Co., Vincennes, Ind., sums up his reasons for rigid control of diseases and insects.

In managing the pest control program, Mark and his brother, Robert, production manager, keep in mind three objectives: 1) Thoroughly cover every tree at the right time. 2) Choose the most effective chemicals available. 3) Execute the entire control program efficiently and as economically as possible.

Dusting started on the 500-acre apple orchard some 20 years ago. At that time Earl Byers, father of Bob and Mark, was in the driver's seat and leading the boys along a sound path of changing experiences. Heavy sprayers carrying tons and tons of water through the orchard every spring made deep, ugly ruts in the soft earth.

The Byers brothers figured dusters might ease the load on the soil and

could be used as supplements to the high-pressure sprayers. A few seasons' experiences showed them to be of extreme value in combating apple scab, and so the dusters took over the sole job of scab control up to calyx or petal-fall. They made no ugly ruts in the orchard soil. So power dusters, now nine in number (Niagara), are keeping Dixie Orchards almost free of scab.

Other advantages the Byers feel about dusters are that they require less time and labor than do sprayers. The nine dusters can cover the entire 500 acres of apples in five or six hours, whereas it would take two or three days with sprayers.

(Continued on page 44)



Dusts at Dixie Orchard Company are applied with Niagara Direct Drive Orchard Dusters.

John Bean Speedsprayer applying concentrate at the Dixie Orchard Company, Vincennes, Ind.



TIMING IS IMPORTANT IN CHERRY SPRAYING

By HAROLD TITUS
Traverse City, Michigan

WHILE there's a wide difference of opinion about materials, Michigan cherry growers agree that the timing of applications is of first importance.

Advances in equipment design have made it possible for us to cover ground rapidly and thus meet emergencies. To recognize those emergencies—such as hazardous weather—and then hustle like a fire department on a run is the secret of control.

In our orchard we have had a minimum of difficulties which call for dormant spraying. We have not encountered the mineola moth, and the bud moth evidently is a rarity. We have been visited by both the pistol and cigar-shaped casebearer, but one good soaking with DN has given us control for several years. I wouldn't know the European brown rot if I met it, but in the past we have been hurt by the common variety.

About the time that this fungus was observed in our vicinity we had shifted from an all-copper summer program back to the use of some lime-sulfur on tart cherries. We mixed 2 gallons to the hundred and applied it for the first two post bloom sprays when we were ahead of a hazard period. Brown rot, or blossom blight,

(Continued on page 46)

WESTERN GROWERS STRESS COVERAGE

By FRANCIS G. CRANE
Brewster, Washington

IN formulating a program we take into consideration what the carry-over is of various pests and diseases, considering each one specifically. This includes consideration of the factors faced by our adjoining neighbors.

As the spray season progresses, our timing will be adjudged by the contingency of what insect or disease may present itself first in such numbers that action is advisable. The type of season, including both bloom dates and the various factors of weather after bloom (i.e., humidity, rainfall, accumulated temperatures), is another factor which will dictate what materials will be used and when.

If we wish to cut to a cheaper program in any given year, it is necessary to have been absolutely clean the previous year. For example, in 1951 it was possible to carry through with one aerial dust and one cover spray. This was due to the fact that one of the severest freezes this area had ever experienced occurred just prior to full bloom, with a subsequent crop reduction. Such an economy would not have been possible if we had not used three cover sprays the previous year and ended the season with virtually no insect activity.

Two factors contributed to our production of insect and disease-free fruit. They were the use of adequate materials and complete coverage. These factors are important for a



Inexpensive concentrate sprayer, an Okanogan Turbomist mounted on 10-gallon Hardie portable, in Crane and Crane Orchard, Brewster, Wash.

successful spray program in any locality, and coverage is particularly important with the new high-volume, air-blast machines.

Timing is a factor, but not as important as it once was, under our western and usually arid conditions. It is 'way down on my list because, if the proper materials have been used and coverage has been kept foremost in the operator's mind, a certain amount of laxness can be tolerated in timing. We try to stretch our sprays far enough apart to hold their number to a minimum. Most growers in our locality wait and see which pest will make them put on the second cover spray: green aphids, European red mite, rust mite (far too little work has been done on this fellow and his effect on size, color, and the subsequent crop), cutworms, codling moth, etc.

Of course, there are serious exceptions to my above remarks on timing—for example, the onset of scab; in this case, timing becomes the prime factor in control. However, this has been a serious problem here only two years in the past 20.

For a normal apple season in this location, a prebloom and two or three covers do an acceptable job. To standardize our thinking I will speak in terms of bulk dilute application on a completely foliated, full-bearing orchard, applying a mini-

(Continued on page 63)



Dilute bulk application with Hardie dual-fan air-blast sprayer in Crane and Crane orchard.



- Horticultural Society Meetings Draw Big, Interested Groups
- Interest Centers on Quality Production and Marketing

101st Meeting for Illinois

ILLINOIS—The Illinois State Horticultural Society met in Springfield recently for its 101st convention. One of the outstanding features on the program was a talk by R. Samuel Dillon, Jr., prominent Hancock, Md., fruit grower. Mr. Dillon's subject, "Growing Appalachia Peaches and Apples for Profit," described growing and marketing practices on the 3000-acre Dillon Orchards. He stressed the fact that he is keeping his orchard young and soon will have no trees over 20 years of age. The young tree, he pointed out, is a more efficient unit and produces a higher proportion of quality apples than old trees.

Dillon's new plantings contain varieties for fresh market and for processing. The big change is to spread the harvest season from June until November. His earliest

rieties will extend the harvest from July to October.

Harry Nye, grower of St. Joseph, Mich. and president of National Peach Council, explained that the purpose of NPC is essentially as a clearing house for information relative to production and marketing of the national peach crop. In view of the fact that consumption of peaches has dropped one-third during the past 12 years, greater promotional efforts to sell the peach crop may be a part of the future program of NPC.

Attesting to the fact that Illinois apple growers produced one of the finest crops in history were the 34 growers elected to the 95 per cent Clean Apple Club this year—the largest number ever to receive the award in a single year. Top winner was Roy Newton, of Martinsville, with a crop of 99.66% clean fruit. Newton has been in the top group since the start of the club.

The "New" Apple Market

"The New Apple Market" was explored by Truman Nold, executive secretary of

the National Apple Institute. In view of facts now available, Nold stated that NAI is pinpointing its promotional efforts on the young growing families, for here lies the most fertile field for increased and continuous consumption of apples. He emphasized the use of the film, "Gateway To Health," as being in this direction. Also, the many NAI advertisements in medical and dental journals as well as school and teacher periodicals are for the purpose of getting more apples into homes where they will be used every day as a health-sustaining food.

Biggest Attendance

WISCONSIN—The annual convention of the Wisconsin State Horticultural Society brought out the largest attendance in its history. Officers re-elected are: Arthur Bassett, Jr., Baraboo, president; Dawson Hauser, Bayfield, vice-president; E. L. Chambers, Madison, treasurer; H. J. Rahmlov, Madison, secretary.

The fruit show was most outstanding (Continued on page 52)



Illinois elected these officers to guide the affairs of their State Horticultural Society and Fruit Council during 1957. Left to right: J. Bon Hartline, Anna, second vice-president; Paul Mallinson, Geneseo, vice-president; Frank Chatten, Quincy, president; Harold J. Hartley, Carbondale, was re-elected secretary-treasurer of both groups.

variety is Lodi, which replaced Transparent in the Dillon Orchards, followed by Williams Red and Red Sumbo (Red sport of Summer Rambo). New plantings of fall and winter varieties are largely to the newer red sports of York, Stayman, Jonathan, Delicious, Grimes Golden, and Golden Delicious.

Dillon's Clean-up Program

Last winter Dillon embarked upon a program to rid farms, yards, and vacant areas of neglected fruit trees. He kept a dozen men busy bulldozing and cutting out such trees, even to the extent of removing entire uncared-for orchards. This program, though costly, has paid off in making the pest control program easier and less expensive.

Irrigation is an important part of apple and peach production in the Dillon Orchards. About 1500 acres can now be given supplemental irrigation from ponds constructed in the orchards or near by.

Dillon reported that he is following the same procedure with respect to peach varieties as with apples—lengthening the harvest season. Within four years he will be completely out of Elbertas, and new va-

FRUIT PEST HANDBOOK

(FIFTY-SIXTH OF A SERIES)

BLACK CHERRY APHID

An introduced pest common throughout the cherry growing areas of the United States is a large, shiny black aphid known as the black cherry aphid. Sweet cherries are the favored host but the sour varieties may also be attacked. However, the sour varieties are only occasionally injured seriously. Injury is due to the claspers of aphids that feed on the new growth as it develops in the spring, causing the leaves to become distorted and curled. This aphid also secretes honeydew in which a sooty mold develops. Injured leaves turn brown and die and the fruit may be dwarfed or become unmarketable.

The insect overwinters in the egg stage, the shiny black eggs being deposited on the smaller branches near the buds. The eggs hatch as the buds are opening in the spring. Within two or three weeks after hatching, the stem mothers are mature and produce young that become adult in about a week. Several generations are produced during a season but the number of aphids on cherry gradually diminish as winged migrants are formed and move to plants of the mustard family. By midsummer few of the aphids are left on cherry. A later generation returns in the fall and produces wingless individuals that lay the overwintering eggs.

Control—Apply a dormant dinitro spray using 1½ pounds of a 40% dinitro powder or equivalent of other formulations, or spray the trees when the aphids appear with: a) 2 pounds of a 25% malathion wettable powder; b) ¼ pint nicotine sulfate with a small amount of soap or casein spreader; c) 1 pound 15% parathion wettable powder; or d) ½ pint of a 40% TEPP emulsifiable concentrate, or equivalent of other formulations, in 100 gallons of water. If the infestation is heavy, a second summer application may be needed 10 to 14 days after the first.

Do not use a dinitro spray after the buds begin development, and do not use para-



Black cherry aphids on leaves before their feeding has caused the leaves to curl.



Black cherry aphids feeding on new growth causing leaves to be distorted and curled.

Photos courtesy USDA.

thion unless you observe all recommended precautions for handling and applying it.—Howard Baker, USDA.



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DN-289 controls overwintering insects

Wide-awake fruit growers everywhere are, right now, getting the jump on insects and mites that overwinter on their trees.

They're using DN-289® on almonds, pecans, apples, pears, cherries, plums, prunes (but, of course, *not* on peaches) to control hibernating insects that can start causing havoc in orchards.

DN-289 controls bud moths, aphids, scale insects, cherry case bearer, pear psylla, twig borer, pecan nut case borer . . .

and reduces early-season red mite populations.

Get DN-289 now from your Dow dealer. He's your headquarters for all the advanced Dow agricultural chemicals . . . to keep you ahead of the field in farming. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Dept., Midland, Mich.



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Gentlemen:

I have been in the orchard business 25 years and since I bought a Cardox Aqua-Jet Sprayer my apple and peach crop is the cleanest and best I ever had. I have been told I have the best apples and peaches in the Valley of Virginia, from Winchester to Harrisonburg.

The Cardox Aqua-Jet Sprayer has saved me in spray material and labor and given perfect performance. The Aqua-Jet heads give me the type of spray it takes to have a clean and healthy crop.

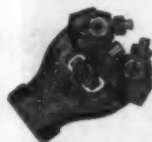
In my opinion it is superior to any sprayer on the market or any that I have previously used or owned. Because it is simple in design and operation, with fewer parts to replace, maintenance cost is low. I highly recommend the Cardox Aqua-Jet Sprayer to all orchard owners.

Yours very truly,

L. S. Vetter
Owner
L. S. VETTER ORCHARDS

Praise like this, coming from a man who knows and has owned other sprayers, can only be earned on the job — right in the orchard! And it is typical of what many other owners of Cardox Aqua-Jet Sprayers have testified about Cardox performance and superior results.

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SYSTEMIC INSECTICIDES

Absorbed by the tree, systemics kill insects and mites two ways

By C. R. CUTRIGHT

Ohio Agricultural Experiment Station

ANY chemical compound that is capable of being absorbed by a plant and then translocated within its vegetative structure to the different parts may be called a systemic.

Many different chemicals possess this characteristic to a greater or lesser degree. Not only do we have systemic insecticides, but we also have fungicides, herbicides, seed treatments, and other groups that may be similarly designated. Fertilizers are systemic, and their beneficial effects are secured by means of this characteristic.

Absorbed by the Tree

It was discovered many years ago that certain chemicals in solution could be injected into and/or be absorbed by a tree. Some of these produced beneficial effects, and others were injurious. From these experiments came the idea of chemotherapy, the internal treatment of plants and trees with chemicals to protect them against diseases and insects. It was thought that insect control could be obtained by having a poison distributed in this manner to all parts of the plant.

Any chemical that is to be used for its systemic effect must meet at least four requirements: 1) The plant or tree must be able to absorb it in relatively large amounts. 2) It must not be phytotoxic, or injurious, to the plants. 3) It must be toxic to the insect or disease organism that is to be controlled. 4) It must leave no residue in the plant or fruit that would be harmful to the consumer.

Insecticides and miticides that meet the foregoing requirements are still limited in number. Some insecticides such as oils and sulfurs are absorbed in small degree, but their effect on insects is not due to this action. Therefore, they are usually not thought of as systemics.

Organic Phosphates

The materials that we usually think of when we talk about systemic insecticides belong to the organic phosphates, which include such well-known products as TEPP, parathion, EPN, and many others. Certain of these organics which do not hydrolyze or break down rapidly in water may

(Continued on page 22)



THIS CAN BE YOUR PICK
when you protect your orchard with



NIACIDE

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After several seasons of commercial tests, Niagara's Niacide is now available for every grower's use and benefit.

Niacide is an exceptionally mild fungicide. It leaves no objectionable spots on either fruit or foliage. Unlike some of the newer organic chemicals, it can be applied safely to all varieties of apples, including Red Delicious and Baldwins. And

its use will actually improve keeping qualities of apples for storage.

Niagara Niacide offers the widest range of control over scab and other fungus diseases. In test orchards it has uniformly upgraded harvests by producing fruit of highest color, finest finish.

Now you can profit from these many benefits. See your Niagara field man or write for literature.

CHECK THESE ADVANTAGES

- Better Colored Fruit
- Finer Finish
- Improved Keeping Qualities
- Non-Spotting
- Non-Toxic To User
- Compatible With All Insecticides
- Widest Range of Control

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With rear-mounted implements, the TRACTION BOOSTER system *automatically* shifts hundreds of pounds to the rear wheels as needed to keep you moving in stubborn soils.

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Engineering in Action

SYSTEMICS

(Continued from page 20)

be absorbed in plant tissue and thus become systemic in action. At certain times and under certain conditions almost any organic phosphate may have a slight systemic effect.

However, some organic phosphates hydrolize slowly and are absorbed rapidly, thus meeting more fully the requirements of a true systemic. Several of these are known, but only a few have approval for use on fruits. Among these are OMPA, which is sold under trade names such as Schradan, Pestox III, and Sytam. A much better-known product is demeton (Systox) which is widely used in spraying apples and some other fruits. Phosdrin is the trade name of one of the newer systemics which has approval for experimental use on apples.

Kill in Two Ways

Because of widely published information on the killing action of a true systemic, many people have the idea that it has no other effect against insects or mites. This is not the case, as all of the present-day systemics kill in two ways. First, they act as contact insecticides or miticides, and secondly, they kill by their systemic action.

In the case of Systox used against mites, a very definite contact action occurs when the material is sprayed on the trees, and motile mites may be killed 100%. However, eggs of the mite hatch, and when the young start to feed, they are killed by the translocated poison in the leaves.

Some persons have the idea that once the poison is inside the plant, it remains there for a long time. This is not true, as disintegration of the poison starts very soon after entry, and proceeds at different rates according to the chemical involved. For example, Phosdrin is very short-lived and may disappear in a few days, while Systox has a much longer life.

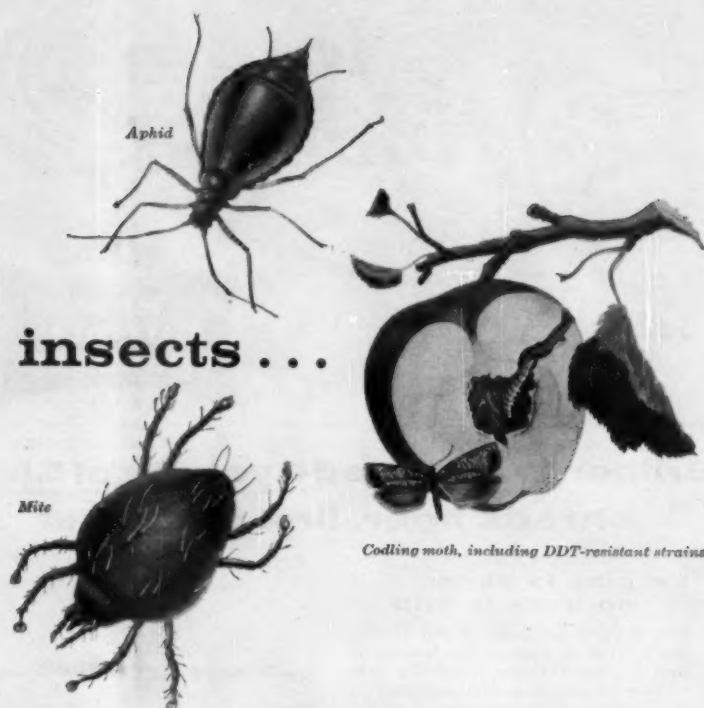
The length of life of a poison in the plant or in fruit is very important to the health of the consumer, and no chemical is approved for use unless this point has been definitely established. Therefore, we have the ruling that Systox, for example, may not be sprayed on apples within 21 days of harvest.

The investigation and use of systemics is still in its infancy, and the perfect material for such employment is perhaps far away. However, much work is being done with promising chemicals, and the future use of this class of insecticides may be nearer than we think.

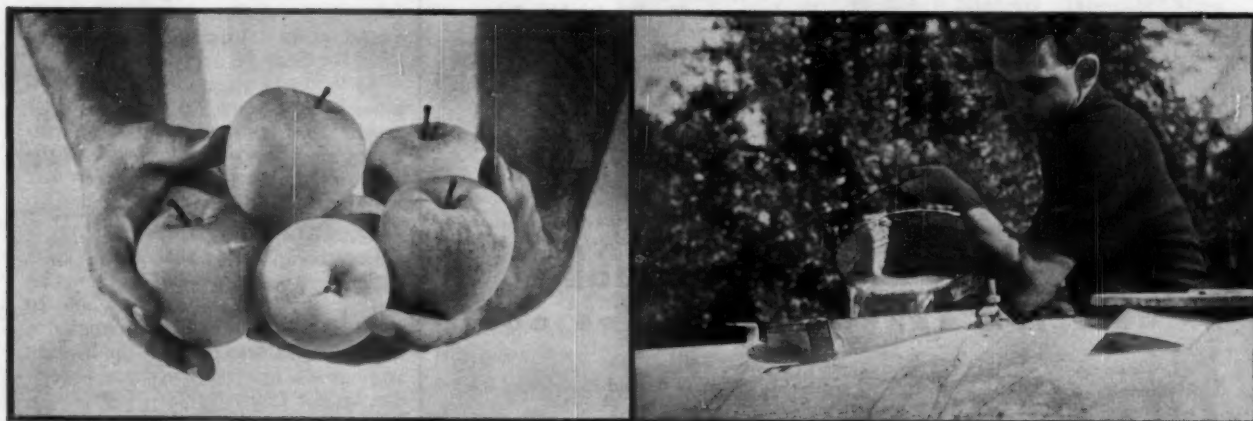
THE END.

AMERICAN FRUIT GROWER

Deadly to insects...



protects fruit finish...
offers safety in use



In 1957, malathion offers more than just insect control. Here's how it stops the bugs; fits fine finish programs; gives your workers extra personal protection.

Malathion controls aphids and mites — Make it basic in your summer sprays, from calyx well into summer covers. You'll also control codling moth resistant to DDT, red-banded leaf roller resistant to DDD. Add a curculio insecticide for a simple, complete summer schedule.

Protects Fruit Finish—Many fine finish programs specify malathion wettable powder sprays because they offer a wide margin of safety to fruit and foliage of sensitive varieties.

Offers safety in use — Any chemical should be handled with care. Malathion makes this easy. Precautions for its safe handling, unlike other phosphates, are like those for DDT.

Spray most crops as close as 72 hours from harvest without residue problems! Malathion has high residue tolerance...and residues disappear rapidly.

Free Grower's Guide—Write American Cyanamid Company, Dept. F1, 30 Rockefeller Plaza, New York 20, N. Y.

MALATHION

insecticides have many uses on every kind of farm

CYANAMID



Brillion's armored Cyclone of Steel shreds finer, first time over

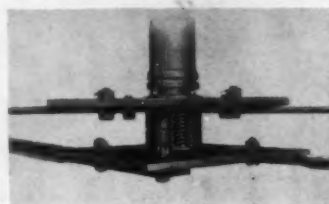
No pins to shear, no belts to slip

Put the new Brillion Cut-All Shredder to work in your orchards—you'll find it ideal for any shredding job. Chews up even heaviest prunings... shreds finer, first time over. And it's just as handy for clipping grass too.

Two sets of heavy-duty double blades, enclosed in $\frac{3}{16}$ " steel plate, easily shred prunings up to 3 inches in diameter. Exclusive friction slip-clutches safely harness full tractor PTO power. No belts to slip, no pins to break.

The offset model with swinging drawbar is tops for any type of orchard shredding. 1. Use in direct pull position for shredding between rows. 2. Or offset the hitch and ride free from branches as you clip close to trees.

The Brillion shredder is available as the offset model with swinging drawbar, the Cut-All with straight pull type hitch, or the pick-up model shown above. See your Brillion dealer for complete information or mail the coupon below.



AS EASY ON YOUR TRACTOR AS A PTO MOWER

Exclusive double slip-clutches above and below each set of blades cushion sudden jolts of tough shredding jobs. When obstruction stops bottom blades, top set keeps running. Gives self-cleaning action.

Brillion
**CUT-ALL
SHREDDERS**

IF BRILLION MAKES IT, IT MUST BE GOOD



HEAVY ORCHARD PRUNINGS... Cut-All Shredder starts to work on abnormally heavy prunings left by a hurricane. Prunings measured up to 6 inches in diameter.

HERE ARE THE RESULTS... the ground covered with short, fine, fluffy shavings. Shredder has made two trips over the right half of the row.

Clip and mail to Brillion Iron Works, Inc., Dept. RS-25-2, Brillion, Wisconsin.
Send me complete information on the Brillion Cut-All Shredders.

Name.....

Route or Street Number.....

Town.....

State.....

PESTICIDE RESIDUES

Spray residues will be less
of a problem this season

By ARTHUR E. MITCHELL
Michigan State University

FOR the past two years growers have been keeping residues of pesticides and plant growth regulators within the tolerances established by the Food and Drug Administration under the Miller Amendment. Much has been accomplished during this time.

The procedures for determining allowable residues on fresh fruit are now clear-cut and are as follows:

1) Residues of unrelated chemicals are acceptable in and on fruit up to the maximum allowable amount for each unrelated chemical.

2) When more than one chemical of a related group is present on the fruit and the residue of each material is distinguishable chemically, the allowable tolerance for the group is determined on a percentage basis. That is, the actual residue for each chemical found on the fruit is valued in terms of per cent of its established tolerance. The total of the percentages of the related compounds found on the fruit must not be higher than 100% to be acceptable.

3) When two or more related compounds are present on fruit and their residues are not distinguishable chemically, allowable residue is that of the compound with the lowest tolerance.

Time Intervals Established

Data compiled by federal and state experiment stations and commercial companies have made it possible to issue for the different chemicals a time interval between last application and harvest to give an acceptable residue on the fruit.

This has given growers the opportunity to develop an acceptable pesticide program, knowing that chemical residues at harvesttime will be within the prescribed limits. This information is available to the fruit industry through state extension publications, and commercial companies have included it on their labels.

Fruit for Processing

Questions have been raised regarding the interpretation of residues on fruits grown for processing. The answer depends entirely on the residue regulations of each state and on the agencies within each state in
(Continued on page 26)

quality
goes up—
costs
come down
with . . .



• This McIntosh tree in the Davis Orchard, Bolton, Mass., has been protected from both scab and rust for 15 years with Du Pont "Fermate." Long-term tests prove that "Fermate" performance helps increase yields of fancy apples . . . at lowest cost to you.

Du Pont Fermate®

FERBAM FUNGICIDE

HERE ARE 5 WAYS YOU PROFIT

- 1. Wide-range protection:** "Fermate" controls both scab and rust, plus more minor diseases than any other fungicide.
- 2. Maintain orchard vigor:** "Fermate" helps keep leaves dark green. Good foliage makes big yields.
- 3. Low original cost:** The low price of "Fermate" means less money in the tank.
- 4. Lower cost per bushel:** More apples with "Fermate" means lower cost of production.
- 5. Fine finish of red varieties:** "Fermate" does not contribute to sun scald or russet of red varieties.

FOR PEACH-LEAF CURL . . . Both experiment stations and growers have found "Fermate" a highly effective, yet inexpensive, dormant spray.

... and for the most effective answer to other fruit-growing problems, use these dependable Du Pont chemicals

To control both scab and rusts on all apple varieties including Goldens, use Du Pont Thylate® thiram fungicide. Tops for early control, for combining with mercury curatives or sulfur, and for a buffer spray. Its white residue allows fine finish on all varieties.

Don't let sooty blotch or flyspeck take over an otherwise clean crop. Regardless of the early protection used, put Du Pont Parzate® zineb fungicide in late-season sprays and be sure. It's light-colored and leaves no residue.

Kill both curculio and codling moth with Du Pont Marlate® 50 methoxychlor insecticide. The long-lasting residue protects from one spray to the next. Marlate® doesn't contribute to russetting—even on sensitive varieties.



On all chemicals, follow label instructions and warnings carefully.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

VISQUEEN[®] film



It's not just the "price" of the bag: *Overall packaging cost should be considered when you choose a bag. Such factors as labor cost, down-time, display value and product identification are more important than basic cost of the film. Get satisfaction in all these areas. Specify VISQUEEN film.*

- 6** reasons why VISQUEEN 'c' means better packaging at lower cost to you!
- superior strength** to eliminate package breakage
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- stiffness and body** for easier fabricating
- years of experience** in producing a superior quality film
- economy** to reduce packaging costs up to 50%

A converter of VISQUEEN film will help you get better, more economical packaging. For names, clip coupon, attach to letterhead and mail.

Important! *VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN has the benefit of research and resources of*

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Plastics Division, Terre Haute, Indiana

Name _____
Title _____
Product _____

RESIDUES

(Continued from page 24)

charge of enforcement. The Food and Drug Administration tolerances apply only to the fruit which comes under interstate commerce regulations.

In many states these fresh fruit tolerances have not been made to apply to fruit grown for processing and transported only within the state. However, any fresh fruit transported from one state to another comes under the Food and Drug Administration tolerances. It is subject to seizure if these tolerances are violated, whether the fruit is for processing or is to be sold fresh.

Certain new chemicals were cleared for commercial use in 1956 and tolerances were established for other chemicals of long standing. Dieldrin was given clearance for use on all stone and pome fruits; Systox (demeton) was cleared for use on apples, pears, and strawberries; ovex was given a residue tolerance for use on apples, pears, peaches, and plums; thiram was cleared for use on apples.

Niacide A and M, Karathane, and certain other chemicals were granted a label in 1956 under the "no residue basis." This simply means that when the material is used as indicated on the label, no residue will be present at harvest. All of these chemicals will probably have established residue tolerances by the 1957 growing season.

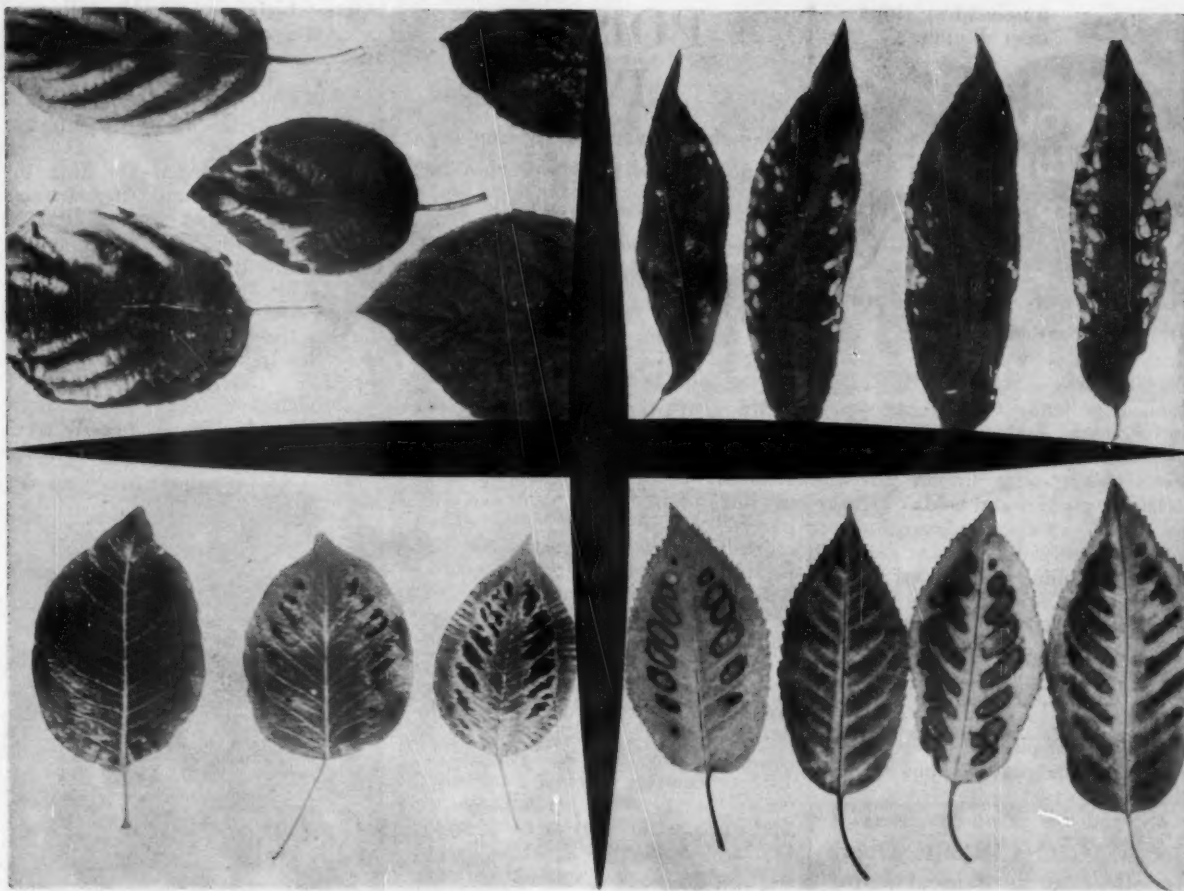
Malathion has not been cleared for use on brambles, currants, or gooseberries because no requests have been made by commercial companies to clear malathion for use on these crops. For small fruit growers this is creating a hardship especially where aphids, mites, and other pests become a problem just before harvest. Similarly, captan has not been cleared for use on raspberries.

What About Toxicity?

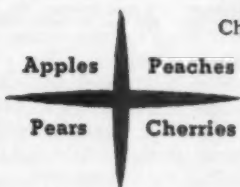
Growers should remember that the residue established for a specific chemical is not necessarily a measure of its toxicity. It usually reflects the amount of residue that would ordinarily remain on the fruit when good pest control practices are followed. This was explained very nicely by Allen B. Lemmon, chief of the Bureau of Chemistry, California State Department of Agriculture, who said, "If only a small amount of a chemical is needed for effective pest control, and it dissipates rapidly, there is no need for as large a tolerance as there would be if the persistence of a chemical were greater."

This is particularly true for fungicides, but in the case of insecticides the residue tolerance is frequently a measure of the toxicity. **THE END.**

AMERICAN FRUIT GROWER



have you seen any of these in your orchards?

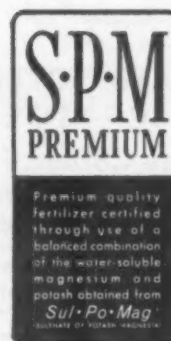


Chances are—you have *not*, because the dead spots in these discolored leaves appear only in the later—and very obvious—stages of magnesium deficiencies. When you do see these magnesium deficiency danger signs in the leaves, you'll probably also see other indications of a very serious shortage of magnesium: (1) early defoliation; (2) poor fruit color; (3) lower fruit quality; and (4) winter damage of trees.

Don't wait until early defoliation, inferior fruit and winter kill tell you your trees lack the water-soluble magnesium they need. Then, it's too late.

Profit-wise fruit growers prevent magnesium deficiencies *before* they become obvious . . . before the shortage of water-soluble magnesium robs them of maximum yields and top profits . . . by applying recommended amounts of SPM Premium type fertilizer containing Sul-Po-Mag. An investment of just pennies per tree can

guarantee that your trees will get *both* fast-acting, readily available, water-soluble magnesium . . . and sulphate of potash. Most fertilizer manufacturers make grades with "SPM." Ask for them at your fertilizer dealer.



Look for this identifying SPM Seal of Approval when you buy. It's your assurance of extra-value fertilizer.

SPM Premium-type fertilizers guarantee

Sul-Po-Mag



Water-Soluble Double Sulphate of Potash-Magnesia
($K_2SO_4 \cdot 2MgSO_4$) 22% K_2O —18% MgO

potash division

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20 NORTH WACKER DRIVE • CHICAGO, ILLINOIS



Protect your property now this new easy way.

Here's a new way to keep out foraging deer — MAGIC CIRCLE Deer Repellent. It's an easy-to-use chemical, that, sprayed on the ground forms a band of special deer-repelling odor around yards, orchards, gardens and fields. Deer just won't cross it. Ingredients have been proven by tests at Pennsylvania's leading agricultural University.

- keeps out deer, and in most cases, beaver, woodchuck, raccoon and skunk
- use with most ordinary sprays or by itself
- won't harm plants
- won't harm spray equipment
- low in cost
- one and five gallon containers

Get MAGIC CIRCLE Deer Repellent at your local farm supply, feed, garden or hardware store.

If not handled locally, order directly from State College Laboratories, State College, Pa., giving name and address of the store you deal with. Write for catalog of other State College Laboratory and J. C. Ehrlich farm and garden products.

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- PRUNING TOOLS
- GRAFTING SUPPLIES
- TREE COMPOUNDS

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A. M. LEONARD & SON, INC. Piqua, Ohio

POISON IVY

One-shot control of poison ivy is possible with new herbicide

By P. M. MILLER

Connecticut Agricultural Experiment Station

POISON ivy and fruit trees sometimes appear to be blood brothers, considering the common occurrence of poison ivy within the drip line of apple trees.

Many fruit growers would like to break up this association and get rid of the pest, but they have been reluctant to do so because present methods of treatment may give only partial control, are expensive, require repeated application, or are injurious to equipment and trees.

In work at the Connecticut Agricultural Experiment Station, one material, amino triazole, gave complete control of poison ivy with one application and yet it apparently has none of the above-mentioned weaknesses.

One application on August 7, 1955, was made to well-established poison ivy growing beneath mature McIntosh apple trees at rates of $\frac{3}{4}$, $1\frac{1}{2}$, and 3 pounds of actual amino triazole per acre. For comparison, another material used to control poison ivy was applied at $\frac{3}{4}$ pound per gallon of water or about 75 to 100 pounds per acre. Some areas were left untreated.

About two weeks later all sprayed poison ivy plants were apparently dead. Apparently-dead poison ivy plants often have a stubborn habit of coming back to life; so examination of sprayed areas was made again in June, 1956. At this time not a single vine with new growth could be found in any of the 20 areas sprayed with amino triazole.

All four areas treated with the other material showed new growth in about 10% of their area; a second application would have been required for complete elimination. The unsprayed vines were growing with their usual poison ivy vigor. Complete kill of poison ivy by amino triazole was also obtained in some other small areas treated in 1955 and in other tests in 1956.

No Tree Injury

During the application in 1955, care was taken not to hit apple foliage with the spray. No trees under which amino triazole was applied have shown any injury. This was as expected. Only a small amount of material was applied to

plants which were on the soil's surface, and only a small amount of amino triazole could have entered the soil. This would have become inactive within two weeks and would have had little chance of entering the tree.

As an example of the fast inactivation in the soil, strawberries which were planted near the orchard in a patch treated 18 days previously with amino triazole showed no injury. This occurred in early May during cool soil temperatures when the inactivation would occur much more slowly than at higher temperatures.

According to the manufacturer, amino triazole will rinse easily from spray tanks. The treatment can be



Courtesy American Cyanamid Co.

One spray of amino triazole completely killed poison ivy on this tree in George Robinson orchard, Shippensburg, Pa. There has been no regrowth. Robinson bought 16 pounds of the weed killer, put it in 300 gallons of water, and sprayed as far as it would go. It cost 22 cents per tree and gave complete control. The year before he couldn't get pickers to work in ivy-laden orchard, and one woman got such a dose of poison that she had to be hospitalized.

made with the regular orchard sprayer and a spray gun, but the sprayer should be thoroughly rinsed before it is used for normal spray operations. There is no evaporation from the soil to cause injury to the trees, but the material will turn apple leaves white if it hits them. Therefore keep sprays low so they hit only the poison ivy.

Cost of Treatment

An acre can be treated for about \$10. The amino triazole is sold under at least three names, Amino Triazole, Amazol, and Weedazol.

Poison ivy can be cleared from orchards with one application of amino triazole during the period from about June 1 to August 15, making the area safe for workers with little expense and danger to trees or equipment. **THE END.**

AMERICAN FRUIT GROWER

STOP FIRE BLIGHT AND WALNUT BLIGHT WITH NEW AGRI-MYCIN® DUST

*Patent Pending

New! Dust Formulation containing antibiotics Terramycin® and streptomycin in an economical easy-to-use application.

Most effective control yet discovered for Fire Blight of pears and apples and Walnut Blight.

Gives long-lasting disease control without russetting of fruit. Boosts yields and market quality.

Four years of tests on more than 100 thousand apple, pear and walnut trees have shown that Agri-mycin spray powder is the most effective control for Fire and Walnut Blight yet discovered.

Now—for the first time—this proven control is available to West Coast growers in a new economic dust formulation.

Fights Blight Two Ways, Doubly Effective

Agri-mycin Dust slowly releases the disease-fighting antibiotics which are then absorbed directly into the leaves and blossoms of your trees—fights blight *within* the plant tissues as well as protecting the outside surface.

It's doubly effective—contains not only streptomycin but the wide-range antibiotic Terramycin as well. Terramycin retards development of

streptomycin-resistant strains of bacteria and actually increases the effectiveness of the streptomycin.

Here are the results you get from Agri-mycin Dust:

- Gets outbreaks of Fire Blight of pears and apples and Walnut Blight under control fast.
- Prevents spread of blight diseases.
- Gives prolonged immunity to re-infection.
- Does not cause russetting of fruit.
- Boosts yields, market quality.
- Non-injurious to foliage.

Follow Your Standard Dusting Practices

Agri-mycin Dust can be combined with fungicides for simultaneous application when needed. It can be used with your regular commercial dusting equipment.

AGRI-MYCIN DUST

Completely formulated and ready to use is now available from these leading West Coast formulators:

L. H. BUTCHER & CO.
Los Angeles, Calif.

PACIFIC GUANO CORP.
Berkeley, Calif.

SUNLAND INDUSTRIES INC.
Fresno, Calif.

UNITED CHEMICAL CO.
Richmond, Calif.

For growers who prefer sprays, Agri-mycin 100 Spray Powder is also available in concentrate form for use as an aqueous blossom spray.



Chas. Pfizer & Co., Inc.



Brooklyn 6, N. Y.

World's largest producer of antibiotics

© TERRAMYCIN BRAND OF OXYTETRACYCLINE

THERE'S ONLY ONE SYSTOX

Only SYSTOX penetrates the sap stream and "inoculates" plant against aphids, mites and leafhoppers.

Only SYSTOX has such long residual effect at relatively low dosages.

Only SYSTOX protects new foliage developed after application.

SYSTOX* is now registered
nationally for use on:

COTTON	CAULIFLOWER	MUSKMELONS
ORANGES	POTATOES	PINEAPPLE
GRAPEFRUIT	LETTUCE	WALNUTS
LEMONS	CABBAGE	PECANS
SEED ALFALFA	APPLES	ALMONDS
BEANS	GRAPES	ORNAMENTALS
BRUSSELS SPROUTS	PEARS	NON-BEARING
BROCCOLI	STRAWBERRIES	FRUITS

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THE QUESTION BOX

Don't be perplexed! Send us your questions—no matter how big or small. A three-cent stamp will bring you an early reply. Address: The Question Box, AMERICAN FRUIT GROWER, Willoughby, Ohio.

WANTS BLACK WALNUTS

Where can I obtain seeds of the Ohio black walnut? I want a bushel for planting in the spring and a much larger amount for planting next fall.—Virginia.

Try Edwin W. Lemke, 62277 Campground Rd., Washington, Mich.; C. F. Hostetter, Bird-in-Hand, Pa.; or Emanuel D. Miller, Rt. #4, Millersburg, Ohio.

APPLE FILM FOR MEETINGS

I would like to show the film, "Apple Picking Pointers," at our state meeting. Can you advise me if this film is available for such use and the cost for loan service?—North Carolina.

Write to the Washington State Apple Commission, 15 Palouse St., Wenatchee, Wash. The film is loaned to groups on payment of express charges or postage.

COLOR CHARTS FOR APPLES

Where can I obtain a color chart as mentioned in your September issue?—Ohio.

A ground color chart for apples has been developed by the USDA and should be obtainable through Dr. J. M. Lutz, Agricultural Marketing Service, Beltsville, Md. Also, a ground color chart specifically for McIntosh apples, but adaptable to other varieties, has been issued by Cornell University. This is distributed as a supplement to Cornell Extension Bulletin 750 and both the bulletin and the supplement can be obtained from the Agricultural Extension Service, Cornell University, Ithaca, N. Y.

DALAPON IN THE ORCHARD

I read somewhere that dalapon can be used to control weeds and grass around fruit trees. Do you recommend it?—Missouri.

The widespread use of this material cannot be recommended until it has been applied under more varied conditions. However, growers are encouraged to use dalapon in limited tests to determine its usefulness under their local conditions.

Dalapon, at the rate of 10 to 20 pounds per acre, has been used around pear and apple trees 10 years old or older with good success but with stone fruits such as peaches and cherries considerable injury has resulted in the East. Under western conditions where rainfall does not occur after the application, no injury resulted. Injury is most likely to take place when heavy rainfall occurs immediately after dalapon has been applied.

According to The Dow Chemical Co., manufacturers of dalapon, its use around fruit trees cannot be fully recommended until some of the questions are answered.

WANTS BRUSH SAW

I want to purchase an Ottawa brush saw for clearing brush in preparation for tree planting. Would appreciate the address of the company.—Pennsylvania.

The address is the Ottawa Mfg. Co., 624 King St., Ottawa, Kans.

SANTA CLARA PRUNE

Could you send me information on the Santa Clara prune? What is its origin and qualities?—Colorado.

We have checked several sources but have been unable to find the Santa Clara prune listed in any reference. It may be the Saint Clair, St. Claire, Sainte-Claire, or Saint Claire, which are synonyms for Bavy, a seedling of Reine Claude (*Prunus domestica*), which is a very good plum.

AMERICAN FRUIT GROWER

NOW! READY 1957

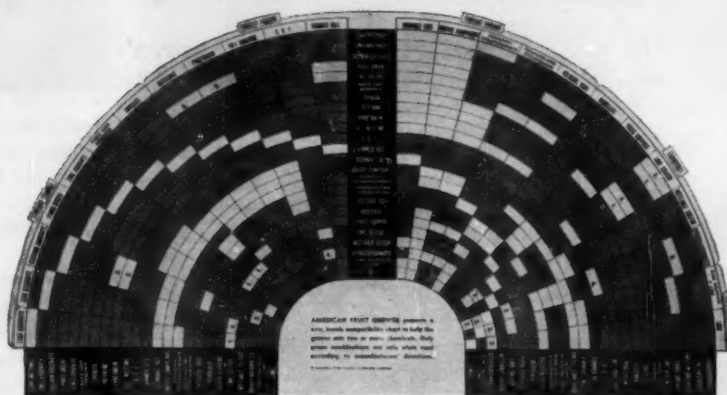
SPRAY COMPATIBILITY CHART!

THE ALL NEW 1957 CHART

Bigger and Better

- Compatibility of Growth Regulators
- Compatibility of Nutrient Sprays
- Many of the New Organic Chemicals and Fungicides Never Listed Before are Included
- New Larger Illustrated Chart—Easier to read

25c



WHAT'LL IT MIX WITH?

Larger and completely revised for 1957. For economical and safe spraying, the compatibility of the various organic insecticides and fungicides is a must. AMERICAN FRUIT GROWER has again produced an ingenious spray compatibility chart which tells the grower at a glance just what chemicals will mix safely. Printed in 3 colors and mounted on Bristol board, it will guide you through the spraying season ahead.

Single copies—25c each For Foreign Countries—75c each
Coin or your check must accompany each order.

AMERICAN FRUIT GROWER

Willoughby, Ohio

Enclosed is money or my check. Send compatibility Chart to:

Name

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On Orders of
100 or more—
your Company name
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**MAKE YOUR
CROPS
GROW
PROFITS**



Get nitrogen grow-power for fruit the fast, easy way with concentrated ARCADIAN UREA 45—the 45% nitrogen fertilizer. You get 36 pounds of actual nitrogen in every 80-pound bag, all high-quality Urea nitrogen, fast-dissolving, leach-resistant and quick-acting even in cold soil. Use UREA 45 to feed your trees and vines faster and easier with the equipment you have, or even by hand. Or apply it in irrigation water, and let water do the work of spreading. UREA 45 is a labor-saver and a money-maker any way you use it. See your dealer now—get ARCADIAN UREA 45 to make fruit profits grow!

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Grow with Arcadian

ARCADIAN UREA 45 the concentrated, free-flowing nitrogen



Do you know the safe way to mix sprays? AMERICAN FRUIT GROWER'S Spray Safety Chart tells you—along with a wealth of other safety information. Order a copy and be safe—not sorry!

SPRAY SAFETY

Safe use of pesticides is outlined in Spray Safety Chart

AMERICAN FRUIT GROWER proudly presents a companion to its famous Spray Compatibility Chart—the Spray Safety Chart.

Appearing for the first time on the following two pages, the new chart gives complete information on the safe and proper use of spray chemicals.

The new chart contains the most complete and concise spray safety information available anywhere. It was compiled with the help of USDA and chemical company experts.

The chart covers in detail all phases of spray pesticide handling: storage and disposal of containers; mixing and applying of sprays and dusts; what to do in case of emergency; and a directory of suppliers of approved respirators and gas-mask canisters, goggles, and protective spray clothing.

Because of the deaths which have occurred from the improper handling and storage of pesticides, some growers shy away from using highly toxic pesticides. But when used as directed and with common sense, all spray formulations are safe—and the job they do in controlling insects and diseases is of inestimable value to the fruit and vegetable industry.

BE SAFE—NOT SORRY!

Order your copy of AMERICAN FRUIT GROWER'S Spray Safety Chart in two colors on heavy Bristol board so it can be posted in spray shed or barn or attached to your sprayer for quick, handy reference.

Single Copies, 25 Cents Each
To Foreign Countries, 75 Cents Each
In bulk quantities, including free imprinting of company or association name and address at bottom:

100 Copies—\$ 20.00
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AMERICAN FRUIT GROWER
Willoughby, Ohio

New System of Overlapping Gear Speeds to *Match Every Job and Load!*



Case 305 Offset Disk harrow disks level, adjusts easily. Full line of pull-types, too.

CASE® 300 12-Speed

You're never "lost" for a gear speed to match every job, load or soil condition with 12-speed Case 300 or 8-speed Case 400 tractors. Field speeds are spaced so closely that you never need poke along in a gear too slow to make full use of engine power . . . never are tempted to overload by using a gear too fast. With generous overlapping of field speeds, you can always work at the best ground and engine speeds for top economy and performance.

Case tractor engines are tops for fuel economy, too. The Case 400 Powrdyne engine produced more power per pound of gasoline than any other tractor in the history of official testing. The Case 300 Powr-Torq engine has a higher compression ratio than any comparable tractor engine. Both tractors give you your choice of fuels—LP-gas, diesel, gasoline or distillate. Both offer you constant-running PTO, dual-control hydraulics and 3-point Eagle-Hitch.

Start right now making more money with the new job-matching Case tractors and equipment. You can buy with a down payment, arrange later payments to suit your income. Ask your dealer about the new Case Crop-Way Purchase Plan.



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J. I. CASE COMPANY • RACINE, WISCONSIN

You make farming a more profitable business when you choose and use full-line Case tractors, balers, combines, and other machines.



Case Fertilizer Spreaders pulverize lumps, spread evenly. Rotors removable. 8 and 10-foot.



Case Shredder chops prunings or cover crops into fine mulch. 6½-foot. Also rotary cutters.

Your Time Is Money . . . Mail Coupon

We will send you full information on items checked below or written in margin. J. I. Case Co., Dept. B-137, Racine, Wis.

- | | |
|--|--|
| <input type="checkbox"/> Case 300 tractors | <input type="checkbox"/> Offset disk harrows |
| <input type="checkbox"/> Case 400 tractors | <input type="checkbox"/> Fertilizer spreaders |
| <input type="checkbox"/> Case 600 tractors | <input type="checkbox"/> Shredders and cutters |

Name

Address



Because of the variable hazard of pesticides, it is impossible to establish comprehensive rules for their use. The following rules should always be followed when using the highly dangerous organic phosphate materials—TEPP, parathion, demeton (Systox). For less dangerous pesticides, consult the label and follow the basic safety rules. When used as directed and with common sense, all commercial spray formulations are safe—and the job they do in controlling insects and diseases is of inestimable value to the fruit and vegetable industry.

STORE SPRAYS AND DUSTS OUT OF REACH OF CHILDREN

1. Store in a locked room, cupboard, or drawer.
2. Store away from human food, medications, or animal feeds.
3. Always store in original, properly labeled, tightly closed container.
4. Never give a neighbor pesticide in an unlabeled container.

GET RID OF USED CONTAINERS PROMPTLY

Several deaths have resulted from children's playing with "empty" insecticide containers.

1. Keep used containers away from children and pets.
2. Burn paper, cardboard, and bag containers out in the open. Keep out of smoke.
3. Wash metal and glass containers as soon as empty. Bury at least 3 or 4 feet deep. Break up glass before burying. Puncture metal containers to render them useless.



Don't Forget

TO READ THE LABEL
each time you mix or apply pesticides. Note carefully the cautions, warnings, and antidotes. Be sure you don't exceed the dosages or apply sprays later than that recommended on the label. To do so may result in residues that exceed the tolerances established by the government. These tolerances vary for different crops, so check and be sure.

SPRAY SAFE

WHEN MIXING SPRAYS

1. Read the label.
2. Wear natural rubber gloves, rubbers or boots, and an approved respirator.
3. Use care to minimize drifting of the dust when wettable powder is emptied into the tank.
4. Avoid spilling, especially concentrates.
5. Don't wash the pesticide through the screen into the tank. Sift it in quickly with the screen removed.
6. Use an agitator in your sprayer.
7. If any pesticide spills on clothing or skin, remove contaminated clothing and wash contaminated skin immediately.

WHEN APPLYING SPRAYS OR DUSTS

1. Read the label.
2. Wear rubber, plastic, or Neoprene suit, cap, approved respirator, goggles, and natural rubber gloves.
3. Never smoke or chew while spraying or dusting. If you stop to eat, drink, or smoke, wash hands and face first.
4. Always spray with the wind. Be careful of wind direction at the ends of rows.
5. Avoid spraying from inside the trees.
6. If clothing becomes wet while spraying, take a bath or shower with warm water and soap promptly. Change to clean clothing.

WHEN YOU ARE THROUGH SPRAYING

1. Always take a bath or shower with warm water and soap when through spraying for the day. Change to clean clothing.
2. Wash spray clothing before using again.

RESPIRATORS NEED SPECIAL CARE

Never wear a contaminated respirator. Follow manufacturer's directions for using and handling respirators. Here are the basic precautions:

1. Change filters twice a day or oftener if breathing becomes difficult.
2. Change cartridges after 8 hours of actual use, or oftener if pesticide odor is noticeable.
3. Remove filters and cartridges and wash facepiece with soap and water after use. After washing, rinse thoroughly to remove traces of soap. Dry facepiece with clean, uncontaminated cloth. Place facepiece in a well-ventilated place to dry.

USE Safe

SYMPTOMS OF PHOSPHATE POISONING

General symptoms of poisoning are: nausea, vomiting, excessive sweating, blurring of vision, diarrhea, excruciating pain in the muscles, excessive salivation, twitching of the face, the chest, foaming at the mouth, urinary and bowel control, and respiratory distress.

IMPORTANT: Phosphate poisoning can be fatal. A single large dose either orally or by inhalation can cause a cumulative build-up of the effects of many exposures over a period of days. It can be just as dangerous as a chronic poisoning. Have your doctor check for cholinesterase activity.

LET YOUR DOCTOR KNOW

Ask your doctor for a copy of "Clinical Memoranda on Phosphate Poisoning" from the U.S. Pesticide Manual, P.O. Box 769, Savannah, Georgia. It contains a ready reference file in your home.

If you are spraying with a material, your doctor may want to see a sample of the material.

1. Have a blood sample taken for cholinesterase values. Phosphates attack many of the cholinesterases. This often happens even when poisoning appears. But values vary widely. That is what is normal for values determined before poisoning.
2. Get a prescription for sulfate tablets. Caution: Do not take sulfate unless symptoms appear, and then immediately to your doctor.

Your doctor or hospital emergency question is on the...

Office

(office ph...

SAFETY CHART

Post This Chart

In a prominent place in spray shed or barn. Be sure that all your workers know the facts about spray safety. We suggest also that a copy of the Spray Safety Chart be fastened to the side of your sprayer and covered with protective film.

Prepared for fruit and vegetable growers by
American Fruit Grower Publishing Company, Willoughby, Ohio

In Case of Emergency . .



PRECAUTIONS

WHEN MIXING AND APPLYING SPRAYS

RESPIRATORS, GOGGLES, AND PROTECTIVE SPRAY CLOTHING

1. The following respirators have been government-tested and accepted for protection against dusts, mists, and low-vapor concentrations of TEPP, demeton, parathion, aldrin, dieldrin, endrin, chlordane, EPN, and nicotine during field use. All have two cartridge units attached to the facepiece.

American Optical Co., Southbridge, Mass.—No. R-5058 Respirator equipped with No. R-58 filter cartridge.

American Optical Co., Southbridge, Mass.—No. R-5561 Respirator equipped with filter cartridge combination R-561.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.—Farm Spray Respirator No. CR-72183 equipped with cartridge No. CR-49293 and filter No. 73488.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.—All Vision Chemical Cartridge Respirator No. CR-74910 equipped with inner cartridge No. CR-73841 and outer cartridge No. 73927.

Willson Products Div., Roy-O-Vac Co., Reading, Pa.—Airt-Tex Respirator with cartridge No. 11A and filter No. R-490.

2. The following respirators have been government-tested and accepted for protection against dusts, mists, and low-vapor concentrations of aldrin, dieldrin, endrin, chlordane, EPN, parathion, and nicotine during field use. They do not give adequate protection against TEPP or demeton vapors.

American Optical Co., Southbridge, Mass.—Respirator No. 5055 equipped with R-55 filter and cartridge unit. Two units attached to facepiece.

Chicago Eye Shield Co., 2300 Warren Blvd., Chicago, Ill.—Healthguard Respirator style 95 with Code B cartridge and filter 1000 or 1001. One unit attached to facepiece.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.—Farm Spray Respirator equipped with filter and cartridge unit. Two units attached to facepiece.

Pulmonon Safety Equipment Corp., 644 Pacific Ave., Brooklyn 17, N.Y.—DC 5100 Aluminum Body Respirator with DMA cartridge and P-7 filter. Two units attached to facepiece.

3. The following gas-mask canisters have been government-tested and accepted for protection against all the insecticides mentioned in section 1 (above) under conditions where respirator cartridges would be inadequate.

Acme Protection Equipment Co., 3037 W. Lake St., Chicago, Ill.—Canister Type 2-OVAG or No. 15-OVAG-F.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.—Canister GMC-1.

Willson Products Div., Roy-O-Vac Co., 203 Washington St., Reading, Pa.—Canister G3FD.

Any manufacturer's Universal Type Canister, Type N, bearing Bureau of Mines approval.

GOGGLES

American Optical Co., Southbridge, Mass.

Chicago Eye Shield Co., 2300 Warren Blvd., Chicago, Ill.

Kimball Safety Products, 9310 Wade Park Ave., Cleveland 4, Ohio.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.

Pulmonon Safety Equipment Corp., 644 Pacific Ave., Brooklyn, N.Y.

Willson Products Div., Roy-O-Vac Co., Reading, Pa.

SPRAY CLOTHING

American Optical Co., Southbridge, Mass.

Broadway Rubber Mfg. Co., 529 E. Broadway, Louisville 2, Ky.

B. F. Goodrich Co., 500 S. Main St., Akron, Ohio.

Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.

Pulmonon Safety Equipment Corp., 644 Pacific Ave., Brooklyn, N.Y.

A. J. Tower Co., 24 Simmons St., Boston 20, Mass.

United States Rubber Co., 17 N.E. Fourth St., Washington, Ind.

Safety

S OF PHOSPHATE POISONING

ptoms of poisoning include giddiness, headache, sweating, tightness of the chest, nausea, excessive salivation, watering of the eyes, convulsions, coma, loss of consciousness, and respiratory failure.

Phosphate poisoning may be caused by a spray or through the skin, or by a single dose. The cumulative effect is over a period of time. Regular blood tests are your best safeguard against cumulative poisoning.

DOCTOR KNOW

your doctor and local hospital to get a Memoranda on Economic Poisons from the U. S. Public Health Service, Atlanta, Ga. Be sure it is kept in your doctor's office.

When spraying with an organic phosphate or may advise you to:

1. A sample taken to determine your blood cholinesterase values. Here's why: Organic phosphates attack man and animals by inactivating the cholinesterase enzyme in the blood. This happens even before symptoms of poisoning appear. But normal cholinesterase levels vary widely. The only way to know if you are normal for you is to have your blood tested before exposure.

2. A prescription for 1/150 grain atropine tablets. **Caution:** Never take atropine unless symptoms of phosphate poisoning then be sure to report immediately to your doctor.

FIRST AID MEASURES

If symptoms of poisoning appear, call your doctor immediately. Give him full details.

DOCTOR'S NAME IS _____

HIS PHONE NUMBER IS _____

1. If the poison has been inhaled, remove the patient to the open air. Watch him constantly. If breathing stops or if patient turns gray or blue, give artificial respiration at once.
2. If the poison has been spilled or absorbed through the skin, remove contaminated clothing and wash contaminated skin. In case of organic phosphate poisoning, use washing or baking soda or yellow laundry soap, if available. If droplets or particles have entered the eyes, flush thoroughly with water.
3. In case of organic phosphate poisoning (parathion, TEPP, demeton)—either external or internal—give patient two 1/150 grain atropine sulfate tablets. Watch patient constantly for respiratory failure, which may appear suddenly. If this happens, administer artificial respiration at once.
4. If the poison has been swallowed, follow label directions as to antidotes. Then empty stomach. If patient is vomiting, give large amounts of warm water. To induce vomiting, give warm salt solution (1 to 2 tablespoons in glass of warm water). Never give anything by mouth to an unconscious person.

FOR EMERGENCY MEDICAL INFORMATION

hospital may call the nearer of the following medical authorities for referral of questions on the diagnosis or treatment of pesticide poisoning cases:

Wayland J. Hayes, Jr., M.D.—Savannah, Georgia
Office phone—ADams 3-7741 Home phone—ADams 2-7618
Griffith E. Quinby, M.D.—Wenatchee, Washington
Office phone—NORMandy 2-5506 Home phone—NORMandy 3-2944

Build Yield-Power equal to more acres

SWIFT'S PLANT FOODS BRING MORE CASH INCOME PER ACRE

Build your income by building the Yield-Power of your soil—make each acre produce extra dollars. It's more profitable than planting more acres in high-value crops.

Use Swift's Specialized Crop Makers—Vigoro Commercial Grower, Blenn or Brimm—if you want the absolute peak in yield and quality. They contain extra growth elements especially needed by fruits and vegetables for top quality as well as yield. Red Steer, too, is the choice of thousands of leading market growers.

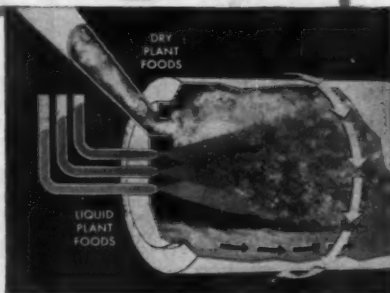
Swift's plant foods are made by the exclusive new FLO-FUSION process which packs each particle with fertility—assures balanced feeding of your crop. They are made in plants located in your area, so they can be tailored to local soil and crop needs.

The high market value of your crop—quality as well as yield—demands special care. This year build Yield-Power equal to more acres of good land—use the latest and best plant foods.



Swift's new FLO-FUSION process packs each particle of plant food with supercharged Yield-Power

High-quality liquid plant foods are injected into dry materials in a revolving FLO-FUSION processing chamber at Swift's Plants. Millions of individual chemical reactions convert raw materials into chemically-hitched plant food, drying the particles as they are formed. You get the benefit of this FLO-FUSION process only at Swift Plants throughout the nation.



Swift

102ND YEAR

PLANT FOOD DIVISION • CHICAGO 9, ILLINOIS

To Serve Your Farm and Family Better

JOINT MEETING

APS helps Kentucky society
celebrate its centennial

ON December 3-5 the American Pomological Society met jointly with the Kentucky State Horticultural Society to celebrate the latter's 100th anniversary meeting. At the Louisville meeting almost every phase of fruit growing, from soil insects in the berry patch to sales promotion of apples and peaches, was given consideration by growers and specialists from a dozen or more states.

The meeting opened, much as it would have 100 years ago, with a lively discussion of new varieties, especially peaches. Leading the discussion were W. D. Armstrong, University of Kentucky; Stanley Johnston, South Haven (Mich.) Experiment Station; John Bregger, grower from Clemson, S. C.; and two Kentucky growers, Boynton Merrill, Henderson, and C. H. Mitchell, Dixon.

Elberta on the Decline

It was impossible for these men to place any single peach variety at the top of the list. All pointed to the decline of the Elberta, however, and replacement with varieties more adapted to a specific region. One definite trend is the planting of varieties to extend the peach harvest season over a two-month period.

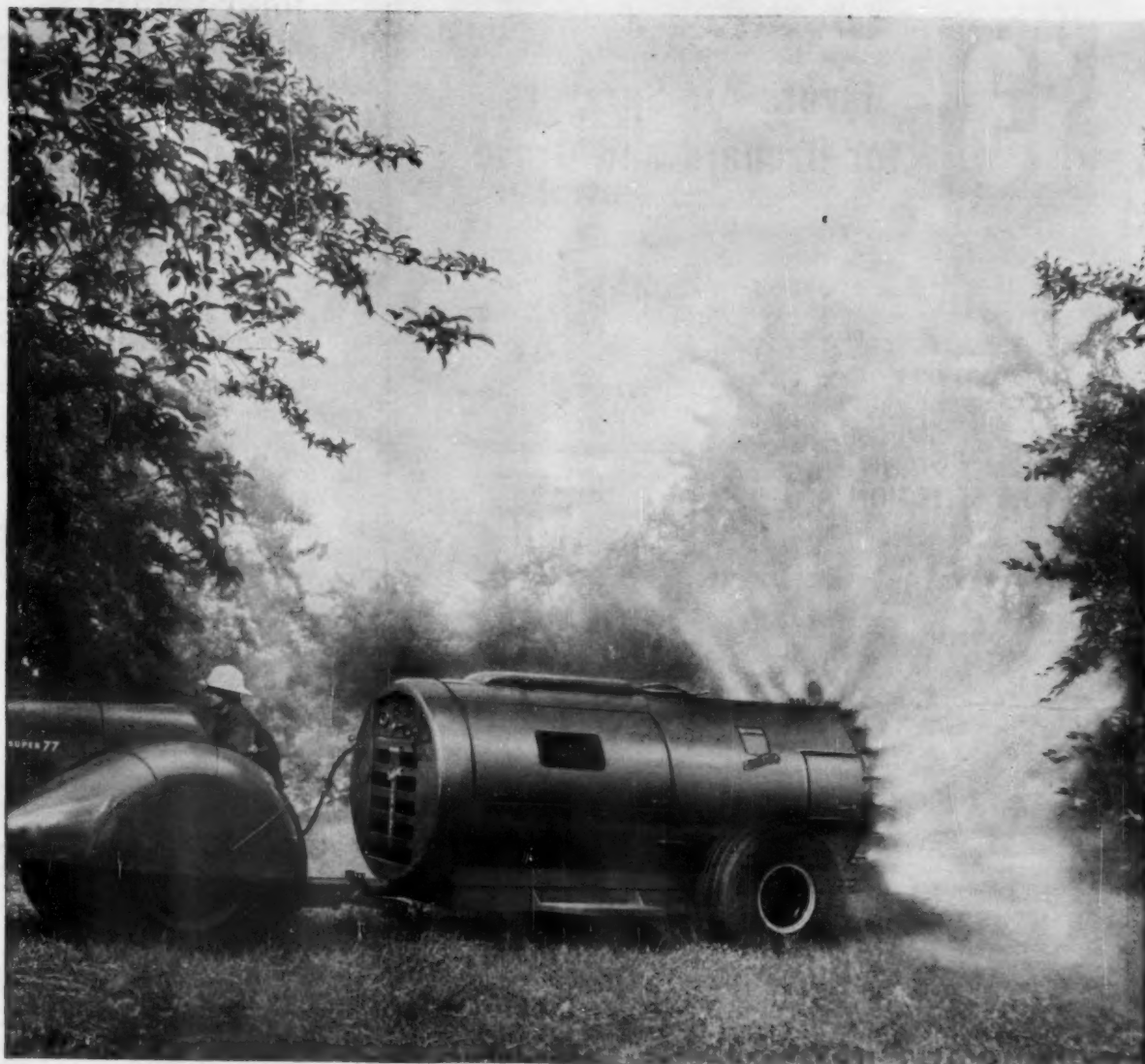
Leon Havis, USDA stone fruit specialist and newly elected president of American Pomological Society, described many of the problems being solved or studied to aid peach growers. Among ways to reduce production costs Havis pointed out that it has been shown at the Beltsville Plant Industry Station that pruning time on uniform trees can be cut 20% by the use of power pruners.

Nematodes pose a serious problem in many peach growing areas, said Havis, especially where new orchards are planted on old sites. Heavy liming has helped get many of these new plantings off to a good start. Others have been helped by soil fumigation with methyl bromide or other fumigants. In other instances neither treatment has been helpful.

Chemical thinning of apples and peaches drew a large interest when discussed by C. L. Burkholder, Purdue University horticulturist, and his panel of growers: Mark Byers, Vincennes, Ind., William Fegenbush, Louisville, Ky., and Dave Perrine, Centralia, Ill. Perrine has been chem-

(Continued on page 38)

AMERICAN FRUIT GROWER



New! Oliver Spray-Blast has both diesel power plus positive spray control

Now's the time to capitalize on Oliver's big two-way orchard savings—diesel power *plus* high-speed Spray-Blast coverage.

Oliver diesel savings snowball—from first cost to final maintenance. The original cost is *low*—no higher than similar gasoline-powered competitive sprayers. Fuel savings are *big*—often as much as two-thirds your normal gasoline cost, depending on local fuel prices. Maintenance costs are very low, due to Oliver's long life and everyday dependability.

You get unmatched time-savings, too, for this Oliver is built for really high-speed spraying. It's short, low and handy in the orchard...stable on the sidehills. It has 500-gallon capacity which saves refilling time...easy-to-reach controls.

And in addition, you get all of Oliver's famous Iron Age quality features: big-capacity centrifugal pump for dilute sprays or an Iron Age high-pressure pump for concentrates...corrosion-resistant tank...new, big-capacity axial-flow fan...

sliding doors that permit one-side spraying...full-vision instrument panel.

See your Oliver dealer for a money-saving Model 500.

The OLIVER Corporation
400 West Madison Street
Chicago 6, Illinois

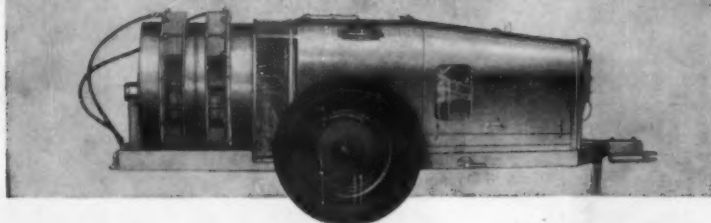


OLIVER

"FINEST IN FARM MACHINERY"

13

Myers Air Sprayers for Orchard and Grove



**Give every Grower
CUSTOM SELECTION**

54 C20 Series, Semi-Concentrate, 26,000 CFM.

- | | |
|--|---|
| 1 Wheel mounted,
20 GPM,
300 gallon tank. | 2 Skid mounted,
20 GPM,
300 gallon tank. |
|--|---|



55 C13 Series, Concentrate, 45,000 CFM.

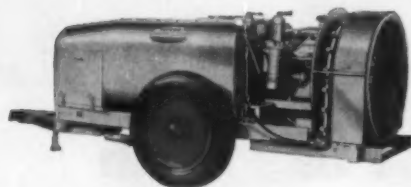
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|---|---|---|
| 3 Wheel mounted,
13 GPM pump,
300 gallon tank. | 4 Wheel mounted,
13 GPM pump,
400 gallon tank. | 5 Wheel mounted,
13 GPM pump,
500 gallon tank. |
|---|---|---|

55 C20 Series, Semi-Concentrate, 45,000 CFM.

- | | | |
|---|---|---|
| 6 Wheel mounted,
20 GPM pump,
300 gallon tank. | 7 Wheel mounted,
20 GPM pump,
400 gallon tank. | 8 Wheel mounted,
20 GPM pump,
500 gallon tank. |
|---|---|---|

55 C120 Series, Dilute, 45,000 CFM.

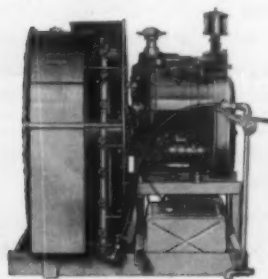
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| 9 Wheel mounted,
120 GPM pump,
300 gallon tank. | 10 Wheel mounted,
120 GPM pump,
400 gallon tank. | 11 Wheel mounted,
120 GPM pump,
500 gallon tank. |
|--|---|---|



56 C20 Series, Semi-Concentrate, 30,000 CFM.

- | |
|--|
| 12 Wheel mounted,
20 GPM pump,
300 gallon tank. |
|--|

13 Concentrate attachment for any high pressure sprayer, 30,000 CFM.



More high velocity air and a high pressure pump that delivers droplets of just the right size. These make the perfect combination that keeps Myers Dilute and Concentrate sprayers leaders in their field. Up to 45,000 cubic feet of air per minute moving at 90 miles per hour covers every tree from top branch to trunk with an even, effective cover of spray material. Results: cleaner, more profitable harvests at lower costs every year.



**POWER SPRAYERS
WATER SYSTEMS AND IRRIGATION PUMPS**

THE F. E. MYERS & BRO. CO., ASHLAND, OHIO • KITCHENER, ONTARIO

JOINT MEETING

(Continued from page 36)

ical thinning for eight years and reported his best results on Golden Delicious last year with Dow's DN No. 1 at the rate of .83 pound per 100 gallons of water applied in bloom. With peaches, he reported that DN No. 1 at 1 1/4 pounds per 100 gallons applied in bloom gave excellent results on Halehaven but failed to thin Redhaven.

Mark Byers emphasized the need for accurate timing of thinning sprays for satisfactory results, especially on peaches. He pointed out that the thinning material must hit the flower pistil just as it emerges, before pollination takes place, if thinning is to be accomplished. Byers reported excellent thinning results with NAA on Golden Delicious and Grimes Golden.



Outgoing officers of American Pomological Society welcome new ones at Louisville convention. Left to right: R. B. Tukey, Lafayette, Ind., retiring secretary-treasurer; H. A. Rollins, Storrs, Conn., retiring president; new officers Leon Havis, Beltsville, Md., president; George M. Kessler, East Lansing, Mich., secretary-treasurer and editor of APS's quarterly publication, *Fruit Varieties and Horticultural Digest*. Not pictured are vice-presidents A. Grant Fox, Hamondale, Ontario, and W. F. Pickett, Manhattan, Kan.

Pushing Up Grape Production

Paul Shepard, Mountain Grove (Mo.) Experiment Station, pointed out that grapes in the Midwest can be a very profitable crop when improved cultural practices are followed. He cited one test in which yields were increased 22% the second year after applying a mulch of good alfalfa hay to the vineyard. Balanced pruning, adequate fertilization, and control of pests have all helped push grape yields up 2 to 4 tons per acre.

Discussion of fruit insect problems was handled by Don Hamilton, USDA Insect Laboratory, Vincennes, Ind., G. E. Marshall, Purdue Experiment Station, Orleans, Ind., and J. G. Rodriguez, Kentucky Experiment Station, Lexington. Don Hamilton suggested that where necessary malathion could replace parathion in control of scale insects on peaches or apples. On peaches a dormant application of liquid lime sulfur at 10 or 11 gallons per 100 gallons of water will control scale insects and will help in control of brown rot. **THE END.**

AMERICAN FRUIT GROWER



The farm truck that's built to move costs you least to own!

The first thing you'll notice when you get behind the wheel of an INTERNATIONAL Truck is the ease of handling, how easy it is to maneuver on or off the road.

You'll be delighted, too, with the quiet, relaxing comfort.

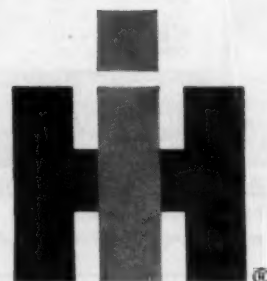
And when you own it, you'll find out an INTERNATIONAL keeps rolling, keeps moving your loads long after other trucks are down for repairs. That's why, over the

years, INTERNATIONAL Trucks cost least to own!

That's a fact, backed up by signed statements of professional fleet truck operators all over the U.S. Their cost records *prove* it!

The time is right for cutting your hauling expenses—and so is the truck. It just takes a trip to your INTERNATIONAL Truck Dealer's. Why not do it now?

INTERNATIONAL HARVESTER COMPANY • CHICAGO



**INTERNATIONAL
TRUCKS**

Motor Trucks • Crawler Tractors • Construction Equipment
McCormick® Farm Equipment and Farmall® Tractors

INCREASE
ORCHARD PRODUCTION
AT LOWER COSTS...

...mulch with a
FITCHBURG Farm
CHIPPER



Tree trimmings are one of your best and cheapest sources of mulch. A Fitchburg Farm Chipper will reduce prunings quickly to moisture-holding wood chips. You eliminate the job of hauling brush.

A mulch of wood chips keeps weeds down... discourages rodents... gives orchards better tilth... a moisture-holding capacity to bring trees through dry spells.

Fruit trees yield more fruit, larger fruit, fruit that ripens earlier when local fertilizer requirements are supplemented with five to seven inches of wood chips around the trees. "Drops" are cushioned, bruise less, and are easier to find.


You will find the Fitchburg Farm Chipper a working machine in your orchard:

- The high chrome steel blades are tough and will need only periodic sharpening.
- Fitchburg Farm Chippers require only minimum maintenance to keep them ready to work.

Anywhere you can drive your tractor, you can chip prunings with a Fitchburg Farm Chipper. Combine your work, chip your tree trimmings with a Fitchburg Farm Chipper, and mulch your orchard in ONE SIMPLE OPERATION.

This Fitchburg Fact Folder will tell you about Fitchburg's exclusive: One Year Guarantee—Patented Safety Spring-Activated Feed Plate—with complete machine specifications included.

A Farm Chipper's cost of from \$650 is soon returned by your increased fruit production, the lowered farm labor costs. Find out how a Fitchburg Chipper will fit your orchard.



Mail the Coupon and receive a Free Copy of "WOOD CHIPS"

FITCHBURG ENGINEERING CORPORATION
Fitchburg, Massachusetts
Send my free copy of "Wood Chips"

Name _____

Address or R. F. D. _____

City _____ State _____

We have (Make and Model) Tractor _____

WINDFALLS

It is said that Isaac Newton while sitting under an apple tree was struck on the head by a falling apple. Thus he conceived the great truth of his Law of Gravitation.



By HENRY BAILEY STEVENS

Cleaned Out In Two Weeks

REPORTS on "pick*- your - own" harvesting are so unanimously favorable that we can't help being a little suspicious. Can it mean that only enthusiastic readers take their pen in hand and losers keep still? One thing is clear, however, from the contributions received—success with this type of harvesting is not limited to orchards located in populous areas. Here, for example, is the experience of R. E. Jack, of Arlington, S.D., who wins the Windfall prize this month.

Mr. Jack was faced last fall with a broken ankle and an above-average crop in his 15-acre apple orchard. Even though there was no large city nearby, he decided to try the pick-your-own program. He ran ads in the weekly papers and passed out notices at his state fair exhibit. The orchard would be open weekdays but closed all day Sunday (thus taking on, one would think, an exceptional handicap). He allowed 50 cents a bushel for picking, but furnished no labor, containers, or storage. At the end of two weeks he was amazed to find himself cleaned out of everything but a few bushels of late crabs.

"The thing I enjoyed most about the venture," says Mr. Jack, "was the human interest angle. Many told me it was their first chance to pick apples right from the tree.

"One thing that amazed me was that so few people know apple varieties, even those sold in most markets."

Stripped In Six Days

SIMILAR success is reported by Cecil L. Fallon, of Darwin, Minn., who operates a 2000-tree orchard in a mixed-farming area 60 miles west of Minneapolis. Most of the dairy and hog farms there have a

few fruit trees, the fruit of which is rarely free from worms. This leads to a lot of sales resistance in the local markets. When Mr. Fallon took a few early apples to town, they moved very slowly at \$2.50 and \$3.00, even though he had sprayed nine times.

"When the crop was ready to pick late in September," he writes, "we ran an ad in three local papers and announcements over the radio. Quite a number of customers came the first day, most of them buying only a half or whole bushel. We live some distance from a main road and should have had some signs up. However, in six days the orchard was stripped, and we wished we'd had twice as many trees."

Sells More Peaches Than Ever Before

IT is worth noting that both the Jack and the Fallon orchards are young and so provide relatively easy picking. A much more accessible location, however, is that of M. F. Gohre, of Beaverton, Ore., on a state highway 14 miles from the center of Portland.

Customers used to be waiting to take the full boxes of his peaches off the trailer; yet year after year it has become more difficult to coax them out. Early California peaches, roadside stands set up by Yakima hawkers, and supermarkets "just around the corner" have intensified competition. Mr. Gohre has always stressed quality; this past season he tried "You Pick" at a low price—5 cents a pound.

"We sold more than ever," he reports, "in spite of customer fears as to quality, climbing ladders, etc."

Now we'd like to hear from some grower who has tried the "pick-your-own" plan and failed at it.

Address your "Windfalls" contributions to Henry Bailey Stevens, AMERICAN FRUIT GROWER, Willoughby, Ohio.

AMERICAN FRUIT GROWER

CLEANER FRUIT...



"EXCELLENT CONTROL"

"A commercial material containing 25 per cent of DDT and 3 per cent of parathion (Black Leaf 253) used at 2½ pounds to 100 gallons gave excellent control of the codling moth when used in all cover sprays and also controlled mites and Forbes scale." *

USE BLACK LEAF 253 COVER SPRAY

CONTROLS CODLING MOTH, RED-BANDED LEAF ROLLER, LEAF HOPPERS, EUROPEAN RED MITE, TWO-SPOTTED MITE, SAN JOSE SCALE, FORBES SCALE AND PESTS.

BLACK LEAF 253 available in 2½- and 5-pound bags, is a custom-tailored summer cover spray for maximum insect protection. Since it reduces the need for costly special sprays, it offers you an economical, uncomplicated spray program.

Apple growers, grape and pear growers, too—in major production areas like New York, Virginia, Pennsylvania and Maryland—have used Black Leaf 253 for their basic summer cover spray program for 3, 4 and 5 years. Each year, these experienced men return to this schedule because they simply can't find any material or combination of materials that give such a wide range of insect kill at such a low price.

Cleaner fruit 2 ways—greatly reduced visible residue and excellent pest control result in full colored, unblemished fruit.

LESS DDT RESIDUE... careful tests conclusively prove that less residue accumulates at harvest with Black Leaf 253 than with straight DDT. When

used as directed, chemical analysis at harvest is well within the tolerance for these materials as determined by the Miller Bill.

COMPATIBILITY... Black Leaf 253 mixes readily with ferbam, captan, glyodin and aramite; also compatible with dieldrin, lead and DDD (rhothane or TDE).

HOW TO USE—Apples and pears... 2½ pounds of Black Leaf 253 in 100 gallons of water. Spray at 7- to 14-day intervals, until 21 days before harvest.

Grapes... use the same mixture and a regular three-spray schedule. Consult local recommendations.

IF YOU PREFER A MALATHION SPRAY...

that gets the same results as 253, is just as economical and just as easy to prepare—just add to water—ask for the 5-pound bag of

NEW BLACK LEAF 258

*Summary of Recent Developments in the Control of Insects and Mites Attacking Apples and Peaches, Transactions of Illinois State Horticultural Society, pages 99-102, by D. W. Hamilton, S. A. Summerland, H. J. McAlister, J. E. Fahey, U.S.D.A., Agr. Res. Adm., Bureau of Entomology and Plant Quarantine, Vincennes, Indiana.

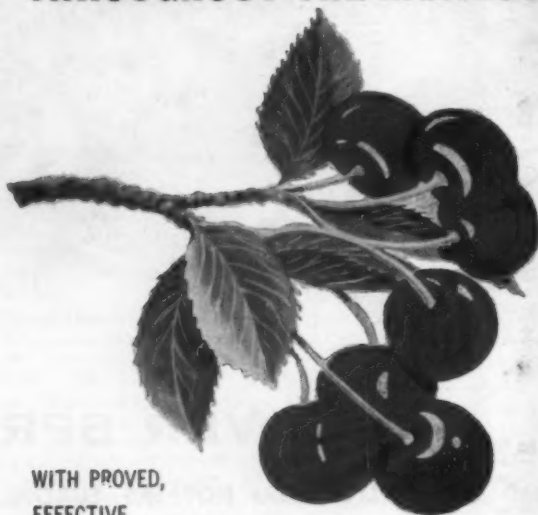


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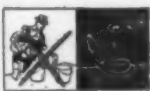
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SPRAYING IN GEORGIA

(Continued from page 16)

Georgia." The major point that Frank made was that following a heavy rain during the critical scab period you must respray your orchards within 48 hours of the start not the finish of that rain.

Incidentally, if you are a peach grower, it pays big dividends to attend that National Peach Council meeting held in February. The ideas you can get by talking to these veteran peach growers of the United States and Canada are well worth the time and money expended.

Following through with the results from past research and grower experience, we come up with the answer to the peach scab problem. All that is necessary is to have the fungicide on the fruit when the scab spores are produced. This means that following rains you have to get in there fast and respray the orchard. The experiments showed no difference whether 6 or 12 pounds of wettable sulfur or 2 pounds of captan per 100 gallons of spray was used. Each gave excellent control. Just as had been theorized, following heavy rains the fungicide was still present on the trees sprayed with the lead arsenate schedule, but was completely washed off the trees where parathion was used.

Peach Research Findings

Every year all the peach research workers in the Southeast meet to formulate a spray program as well as cultural practices. Several findings came out of the last five meetings:

1) Cover sprays will have to be applied at two-week intervals throughout the season to control scab and brown rot.

2) Scale insects are beginning to build up resistance to parathion. Growers not using dormant sprays, but depending on summer sprays of parathion, must check their orchards carefully for scale build-up.

3) Summer trunk sprays have not given commercial control of peach tree borers where the infestation of this insect is heavy. However, where the trunk sprays are carefully used from the first summer the trees are planted, very effective control of the borers is maintained.

4) There are certain seasons when captan fails to increase color and improve the finish of peaches. Ordinarily this fungicide not only gives excellent control of brown and Rhizopus rots, but increases red overcolor. This color increase seems to be associated with dry, sunny weather which is the usual case during the ripening period of the Dixigem and Elberta-type peaches in the Southeast. **THE END.**

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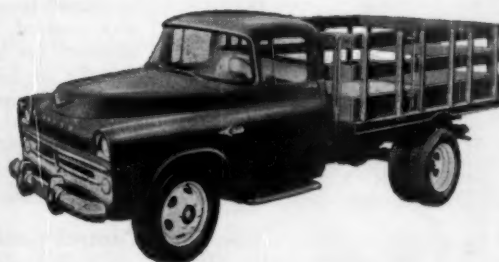
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DIXIE ORCHARDS SPRAY—DUST PROGRAM

(Continued from page 17)

If the spring is wet with frequent rains, the Byers dust the orchards every three days. Otherwise, a dust is applied after a sufficient wetting period to cause scab infection. Dusts are preferably applied during a light rain, but may be applied during heavy rains if scab infection is critical. Evening or night dusting is preferred over daytime because the air is quieter and a more thorough job can be done.

The number of dusts applied during the season obviously depends upon the amount of rain or length of wetting. They vary from three to six from early green tip up to petal-fall time.

Basic material in the Byers dust program is sulfur (Niagara Kolo-dust). However, in years when no dormant spray is applied to apples, a combination sulfur and BHC dust is applied to control aphids in addition to scab.

A dormant oil spray is generally applied every other year to Dixie apples. This mixture consists of a cold mix superior oil (Texaco) emulsified with Bordeaux mixture and with DN Dry Mix added for aphid control. Application is made as late in the spring as is safe, just before buds show silver tip.

With the petal-fall or calyx application the Byers switch from dust to spray and continue for the rest of the season. However, they are investigating the use of dust for cover sprays.

The calyx spray includes arsenate of lead, sulfur (Kolo-fog), and some hydrated lime. If no dormant spray was applied, Systox is added to the mixture for aphid control. It helps greatly in keeping red mites down too. Dieldrin is also added to this spray for control of plum curculio. It is especially important to apply to summer apples and trees next to peaches.

Control Codling Moths

In 10 to 14 days after calyx, the first codling moths start to appear. Into the mixture of lead and sulfur now goes DDT to eliminate as many moths from the orchards as possible. The next two sprays, second and third covers, include DDT, sulfur, and parathion or malathion, while moths are at their peak during the first brood. The most complete kill now means that less trouble will be experienced with the second brood. Applications are spaced 10 to 14 days apart, depending upon number of moths in flight.

Two more cover sprays, making

a total of five, are usually sufficient to completely control the first brood codling moth. With the fourth cover, captan replaces sulfur for scab and other disease control. Sulfur is kept in the program up to this time so as to reduce danger of powdery mildew showing up later. Captan is preferred during hot weather since it appears to cause no injury to fruit finish or to foliage. DDT is included for insect control.

Control of second brood codling moth begins with the sixth cover spray. Now DDT and captan are the basic materials. If red or spotted mites are showing up, Systox or aramite is added. Ordinarily three cover sprays keep second brood codling moth under control. This brings the total spray applications up to ten, including the calyx.

Spraying equipment includes a model 40 Speedsprayer (Bean), a model 36 Speedsprayer (Bean), and three 55 gpm and two 35 gpm high-pressure pumps (all Bean). Byers like the air-blast type sprayers and may eventually convert to them entirely as pressure units wear out.

The model 40 Speedsprayer covers 100 acres of apples in half the time required by a 55 gpm high-pressure rig. One high-pressure rig equipped with a man and a 12-nozzle broom on a tower on the sprayer, with another broom operated by the tractor driver, can cover thoroughly 100 acres in three days if weather is favorable. Apples are all sprayed with a 1X concentration.

Peach Program

In addition to the 500 acres of apples, the Byers brothers have 250 acres of bearing peaches to manage. No dormant oil spray is applied because scale is controlled by the summer applications of parathion. Even the dormant peach leaf curl spray is not applied every year. A year or two may elapse between curl sprays provided no curl is seen in the orchard or near-by, and provided a full summer fungicide schedule has been applied. When necessary, Bordeaux mixture is applied very early in the spring before buds swell.

One of the most important spray periods, the Byers have discovered, is during peach bloom. Thorough coverage with effective materials at this critical time can reduce hazards of brown rot, catfacing insects, and even curculio.

Applications are timed for early bloom, full bloom, and late bloom, and may be either sprays, dusts, or

combinations. Materials in the first or early bloom application are sulfur and DDT. The second or full-bloom application is with sulfur and Phygon, and the third or late bloom application includes dieldrin with sulfur.

Beginning with shuck-split, weekly spray applications are made to all peaches for control of plum curculio. One side of a tree row is sprayed one week, and the other side the next. This method has given the Byers better control than spraying both sides every ten days or two weeks.

The first three applications include sulfur and dieldrin in the mixture. In June captan replaces sulfur to prevent sunburning of peaches, and parathion replaces dieldrin for control of oriental fruit moth, curculio, and to some extent red mites. However, two-spotted mites are not completely controlled under the parathion program, so spray applications of aramite are made in the summer.

Captan Controls Rot

Captan has proved to be an effective control for brown rot and for Rhizopus rot or mold at harvest and after. The Byers brothers now practice dusting with captan during the harvest season to reduce the development of Rhizopus mold later. Captan has largely replaced the sulfur dust they have been using for a number of years during harvest.

Peach tree borer is controlled by two applications of DDT in late summer. These are spaced four weeks apart, with the first coming about July 30. A concentrated spray of 6 pounds of DDT per 100 gallons is employed. This spray does not control the lesser borer which attacks the main limbs instead of the trunk. Parathion applied in two sprays to the main framework of the trees at the same time as the DDT sprays keeps this pest under control.

Spraying of peaches is accomplished with the two Speedsprayers and the two 35 gpm high-pressure rigs. The latter are equipped with air-blast attachments for quicker and more efficient spraying of peaches. Peach sprays are made either 2X or 3X concentration.

As with apples, the objective of the brothers is to use more dust applications on peaches because of the great economy in application as well as equipment investment. This season they will test dusting with malathion. Before the use of parathion, they used a complete dust summer schedule on peaches and would like to go back to that method of application if possible.

THE END.



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STANDARD
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CHERRY SPRAYING

(Continued from page 17)

annoyed some of our neighbors there-after, but we failed to find it.

We made the shift because, while copper had controlled leaf spot, it resulted in a certain amount of injury each year. A percentage of leaves on the new growth dropped before they had functioned fully, and as a result fruit spurs did not develop in sufficient numbers the following season. In the past we had used lime-sulfur and had not recognized this difficulty.

Likes Glyodin Program

We gave glyodin mixtures a try on a few rows of Montmorency cherries to learn for ourselves what all the talking was about. The foliage appears to like this material so well, the control of shot hole seems to be so excellent, and even the tenderest leaves hang on so persistently that we are, for the time being at least, committed to such a program.

For curculio and fruit fly we stick to arsenate of lead, 3 and 2 pounds to the hundred. Instead of the usual four applications every 10 days or two weeks, we are now going through every other row weekly, as do many growers in our vicinity. Of course, if bad weather threatens with new growth unprotected, we aim to get there ahead of it. This program has given us control.

Sweet Cherry Problems

Sweet cherries present other problems. A DN dormant spray will clean up black aphids if properly applied. Missing out in that period, nicotine dust has done a good job for us. It seems more effective than a liquid if we wait for a windless, warm evening.

We have never had trouble keeping sweet cherry foliage healthy, and we've used all the common materials at one time or another. Our preference, however, is for the sulfurs. When fresh fruit promises the best profits, we frequently stop using liquids at the second cover and use sulfur dust thereafter. This does away with much visible spray residue. We also rely on sulfur dust when brown rot threatens around harvest-time.

We still feel that we do not know all there is to know about air-blast spraying, and at the present we don't go further than a 2x concentrate.

Some of this does not square with experiment station recommendations, and I'm not advocating our plan as a substitute for any other. But it has worked for us and is less costly than some other programs. **THE END.**

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TAX BREAK for the Fruit Grower

**New methods of figuring depreciation
give fruit growers a real tax break**

By MARK S. GROVE

Public Accountant, Martinsburg, W. Va.

THE latest changes in the Internal Revenue Code section on depreciation provide welcome tax breaks to the orchardist. Part of the tax bill can be postponed and very possibly reduced by proper application of the new law.

Formerly the purchase of a sprayer with a useful life of eight years costing \$8000 resulted in an annual depreciation charge of \$1000. This was the straight line method. The cost divided by the estimated number of years of useful life was the annual charge.

The grower who bought such a piece of equipment found himself in the position of having paid out a substantial amount of cash with only a moderate tax deduction for depreciation in that first year. A considerate Congress recognized the hardship of this situation and provided appropriate tax relief.

New depreciation methods in the law are the "declining balance" and the "sum of the years digits" methods. They may be applied only to tangible business assets acquired in 1954 or later which have a useful life of at least three years. Also, the original use of the property must commence with the taxpayer. If the asset is a new construction or a reconstruction or erection, then the completion must have been in 1954 or later.

The taxpayer must select the most acceptable depreciation method to be applied to each item of property acquired during the year. Thereafter he is required to continue that method or methods except that he may at any time switch to the straight line method without obtaining permission from the Commissioner of Internal Revenue.

Declining Balance Method

The declining balance method provides the greatest depreciation deduction in the first year and a gradually smaller deduction in the remaining years of useful life.

The calculation of the first year's depreciation is very similar to the straight line method in that the cost is divided by the number of years of useful life of the asset. The result

obtained is then multiplied by a factor selected by the taxpayer. The code provides that this factor may be as much as 200%.

Using the \$8000 sprayer again as an illustration, the annual depreciation under the straight line method was found to be \$1000 in the first year and for subsequent years. Under the declining balance method the first year's depreciation could be as much as 200% of the straight line amount, or \$2000.

In the second year and for subsequent years the new method departs from the straight line. The original cost is reduced by depreciation taken on the asset in previous years and divided by the years of useful life of the asset from date of acquisition. This result is multiplied by 200% to determine the annual charge.

The second year's depreciation of the sprayer would be \$1500, computed by dividing the original cost less prior depreciation (\$8000 less \$2000) by eight and multiplying by 200%.

By the end of the eighth year a total depreciation of \$7199.07 will have been taken. The undepreciated basis of the asset, \$800.93, may be charged off in the eighth year along with the normal depreciation for that year.

Alternate Method

The taxpayer may apply an alternate method as the end of useful life period approaches by changing to the straight line method. By the end of the fifth year the depreciation charges accumulated on the sprayer would amount to \$6101.55, leaving an undepreciated balance of \$1898.45. If the change is made at this point to the straight line method, the annual charge for each of the three remaining years is one-third of \$1898.45 or \$632.81 $\frac{2}{3}$.

In the preceding example of the declining balance method it is assumed that the sprayer was purchased at the beginning of the year and was used the entire year. Had the purchases been on April 1 by a taxpayer on the calendar year basis it would be necessary to reduce the first year's depreciation charge to three-fourths of the computed amount, in this case \$1500. The second year's depreciation would be \$1625.00 (\$8000 less

\$1500, divided by 8 and multiplied by 200%).

Complete Depreciation

The sum of the years digits method also provides a greater first-year depreciation with diminishing charges in later years. It has the advantage of resulting in complete depreciation of the property within the useful life period.

The calculation consists of multiplying the cost of the asset by a fraction which changes annually. The fraction's numerator is the remaining years of useful life of the asset. The denominator is the sum of the numbers between one and the year which is the end of the useful life.

To compute the first year's depreciation of an \$8000 sprayer with an eight-year useful life, the fraction of 8/36 (the remaining years of depreciation over the sum of the numbers one through eight) is multiplied

probably be no salvage value to take into account.

The taxpayer should reduce the cost basis of an asset by the estimated salvage value and compute depreciation on the adjusted basis.

Which Method to Use?

The selection of the depreciation method to be used on a newly-acquired asset should depend on the current year's profit subject to tax, anticipated future profits and equipment purchases. If at year's end the grower finds that he has had an unusually profitable year, it would probably be to his advantage to apply the declining balance method to his acquisitions for that year.

In the event that he has experienced an operating loss, he should very probably select the straight line method and thereby leave a greater undepreciated balance to be carried over for availability in future years.

ALLOWABLE DEPRECIATION BY METHODS

Depreciation Period	Straight Line	Declining Balance (200%)	Decl. Bal. With Change to Straight Line in 6th Year	Sum of the Years Digits
First Year	\$1000.00	\$2000.00	\$2000.00	\$1777.78
Second Year	1000.00	1500.00	1500.00	1555.55
Third Year	1000.00	1125.00	1125.00	1333.33
Fourth Year	1000.00	843.75	843.75	1111.11
Fifth Year	1000.00	632.80	632.80	888.89
Sixth Year	1000.00	474.60	632.82	666.67
Seventh Year	1000.00	355.96	632.82	444.44
Eighth Year	1000.00	1067.89	632.81	222.23
Total	\$8000.00	\$8000.00	\$8000.00	\$8000.00

by \$8000, resulting in a product of \$1777.78. For the second year the fraction becomes 7/36 and the depreciation is \$1555.55.

When the depreciation to be taken is for less than a full year it is necessary to compute a full year's depreciation and prorate it for the actual period. For an April 1 acquisition by the calendar year taxpayer, the sprayer's depreciation in the first year would be three-fourths of \$1777.78 or \$1333.34. In the second year the charge would consist of 1/4 of the normal first year's depreciation plus 3/4 of the normal second year's depreciation.

A comparison of the methods discussed and the annual depreciation charges for the \$8000 sprayer with a useful life of eight years is shown in the above table.

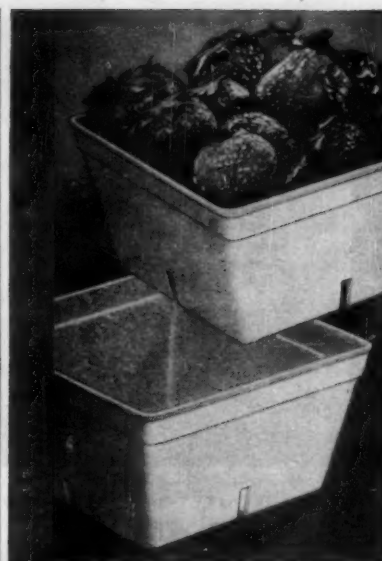
The regulations require that the salvage value of an asset be considered in the calculation of depreciation. It has not been included in the examples in order to minimize the complexity. The salvage value is the market value of the asset at the expiration of its useful life. Often it is nothing more than junk value. In the case of ladders, picking sacks, obsolete graders, and other equipment there would

The fruit grower's income fluctuates widely in contrast to the income of a salaried taxpayer. Over a period of years the grower's aggregate income tax may be substantially higher than his fellow-taxpayer because of high incomes in some years and break-even or losses in other years. By the proper selection of depreciation methods the annual profits can be appreciably stabilized. THE END.



NO CLOGGING OF INTAKE HOSE

There's no danger of clogging the intake hose of a sprayer with mud, leaves, or other debris with this intake made by Arthur Borjeson, Gould Hill Farm, Contoosook, N.H. He uses a section of galvanized roofing rolled into a long tube and capped with wire screening on one end. The intake hose is slipped into the tube, which remains in the water during the day's spraying. It is especially good for sloping waterholes.—Charles L. Stratton.



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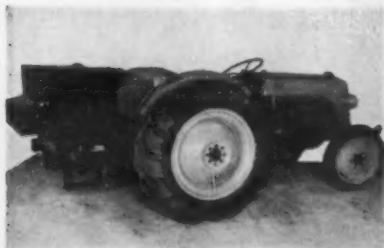


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CITRUS BATTLE

(Continued from page 15)

larger quantities of fertilizer at more frequent intervals must be applied. Finally, the cost of such practices becomes economically prohibitive. When the heavy irrigation is halted, the temporarily stimulated trees take a nose dive in appearance until the quantity of top is small enough for the limited root system to supply.

Point of No Return

When a spreading decline citrus grove reaches the point of no return, from a profitable standpoint, it is abandoned and retrogresses to its lowest ebb. Still it does not die, but provides a limited but permanent abode for the burrowing nematodes.

If all hosts attacked would die, there is a good possibility the nematodes would starve out and eradicate themselves within a period of from three months to two years. The burrowing nematode is not cyst-forming like the golden nematode, and it does not cause its host to form a resinous gall of protection like the root-knot nematode. Without favorable protective characteristics their life span is much shorter when no hosts are available.

Slightly more than 5000 citrus groves have been examined for burrowing nematodes in Florida by the State Plant Board and the USDA, and 1069 groves have yielded this disease-causing worm. Only about 1% of the state's citrus is infested, but the high percentage of detection is due to the examination of suspicious areas to a much greater degree than unsuspecting areas.

The control program being carried out is a harsh one. Every logical idea presented has been tested by the Florida Citrus Experiment Station, but so far only one control has proved effective, and no easier or better methods are foreseen in the near future.

'Pull-and-Treat' Program

At the recommendations of the citrus industry, the State Plant Board, plant regulatory agency for Florida, adopted control measures known as the "pull-and-treat program" which was developed by the Florida Citrus Experiment Station.

The program consists of pulling or pushing out four citrus trees past the last visibly affected tree or two trees past the last tree in the roots of which burrowing nematodes are found, or all host plants within 50 feet of the last known infested tree, whichever is the greater distance. The soil where the trees have been

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removed is treated with D-D soil fumigant at 60 to 66 gallons per acre.

A two-year waiting period is required before replanting, to allow for starvation of any burrowing nematodes that might have survived the fumigation and to permit an opportunity to observe and sample the trees along the margin of the treated area to make certain enough trees have been removed.

The Florida State Legislature, in the spring of 1955, appropriated \$1,756,300 for the State Plant Board to control or contain spreading decline. The Plant Pest Control Branch of the USDA has entered the program on a co-operative basis with appropriations of about \$600,000.

No Payment to Growers

The two government agencies pay all the costs of the operation. At present no provision has been made to compensate for the loss of trees incurred by the grower.

The control program is not aimed at eradicating the pest from the state, an obvious impossibility. It is aimed at halting the spread of the pest in commercial citrus producing areas by eradicating it in those areas. Many dooryards and miscellaneous properties in residential areas will not be treated. Since July, 1955, 3,197 acres have been "pulled and treated." The remaining infested acreage, approximately 4000, will be treated this year.

The state's cost of pulling and treating an acre of infested citrus grove is averaging about \$310. That figure is from \$100 to \$300 per acre less than was anticipated.

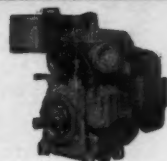
Legal Wrangle

There generally is a legal wrangle in control programs of this scope, and this particular project is no exception. Organic farmer enthusiasts have proclaimed a number of controls that have not stood up under scientific tests. Compensating growers for loss of trees has been a strong issue. These two views have carried the control program into the courts.

The Circuit Court upheld the program as it is being administered, but it has been appealed to the State Supreme Court, which should hand down a decision in the near future. If that body rules against the program, naturally all the work will be halted. If it rules in favor of the methods and authority being used by the State Plant Board of Florida, the rest of the program will be like pulling a bad tooth; it will hurt for awhile, but then everyone will be glad that it is out. **THE END.**

FEBRUARY, 1957

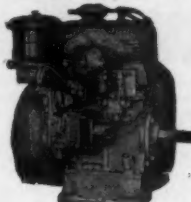
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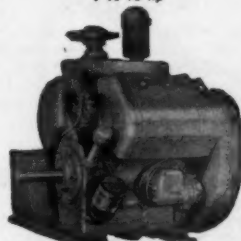
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STATE NEWS

(Continued from page 18)

with Art Wendell winning the Grand Championship on a plate of McIntosh apples. The Grand Champion one-half bushel was shown by Allyn Kaste, Galesville; variety, McIntosh. Reserve Champion one-half bushel, shown by William Connell, Menomonie, was of Red Delicious variety. Largest point winner was Emit Beyer, Malone, who also exhibited the Reserve Champion plate of Cortlands.

The Wisconsin Apple Institute held a session in connection with the convention, and elected the following officers: Le Roy Meyer, Milwaukee, president; Allyn Kaste, vice-president; Don Palmer, Appleton, secretary-treasurer.

C. J. Telfer

C. J. Telfer, Green Bay, for many years manager of the Larsen Company Orchards, passed away recently. Mr. Telfer was a past director and past president of Wisconsin State Horticultural Society, and past president of Wisconsin Apple Institute. He received the Honorary Recognition Certificate of the society for outstanding work in orcharding and for services to horticultural organizations.—H. J. Rahmlow, Sec'y, Madison.

Directors Re-elected

MINNESOTA—At the recent annual meeting of the Minnesota Fruit Growers Association the following were reelected directors for a term of three years: N. B. Graves, Dakota; L. R. Fischer, Hastings; Victor Leidel, La Crescent; George W. Nelson, La Crescent; J. D. Winter, St. Paul.—J. D. Winter, Sec'y, St. Paul.

Bigger Strawberry Yields

TENNESSEE—Strawberry growers attending the Tennessee State Horticultural Society's 51st annual meeting were privileged to hear Dr. D. H. Scott, USDA small fruits specialist from Beltsville, Md., tell how the federal strawberry program is set up to meet the state needs. The big objective is to supply the nurseryman, and, in turn, the grower, with virus-free and nematode-free plants.

Dr. Scott cited several state tests where virus-free plants increased yields from 60% to 200% over old standard plants.



President J. Blaine Donoho, Portland, calls the meeting of the Tennessee State Horticultural Society to order. At the left is A. N. Pratt, Nashville, secretary-treasurer of the group.



The camera caught these three strawberry experts discussing virus-free and nematode-free strawberry plants during the Tennessee meeting. Left to right: Dr. D. H. Scott, USDA, Beltsville, Md.; D. G. Sinclair, Sinclair Nurseries, Greenfield, Tenn.; J. F. Womble, grower, Greenfield.

Three new varieties released last October and now ready for trial plantings are Earlidawn, Redglow, and Surecrop.

"Grow varieties that will either ship or freeze," this was advice to growers from H. H. W. Hill, president, Tennessee Foods, Inc., Portland, a company organized as insurance for growers against glutted fresh markets. With this advice a grower has two good possibilities for selling his crop.

Peach Varieties Discussed

Peach growers listened with interest to John Bregger, Clemson, S. C., grower, as he discussed peach varieties and problems in the Middle South. Growers in this area

are looking for varieties with high quality for local consumption and for a succession of varieties for a long harvest period.

Among the early varieties, Bregger mentioned Cardinal, Dixigem, Coronet, and Redhaven, as suitable for commercial planting. Some of the good later varieties include Sunhigh, Redskin, and Rio-Oso-Gem.

Varieties with exceptionally high quality are Raritan Rose, Laterose, and Nectar—all white-fleshed varieties. Some outstanding new varieties worth trial in this area are Keystone, Sunhaven, Richhaven, Eri-Red-Fre, Redglow, Ranger, Blake, and Loring.

New officers elected for 1957 are M. M. Bullard, Newport, president; Harry Wallace, Knoxville, first vice-president; J. T. Elrod, Clinton, east Tennessee vice-president; Joe Peay, Goodlettsville, middle Tennessee vice-president; Irvin Fly, Milan, west Tennessee vice-president; A. N. Pratt, Nashville, secretary-treasurer.—Eldon S. Banta.

Elmer Wright

VERMONT—The sudden death of Elmer Wright, of Weybridge, saddened all state apple growers. Mr. Wright had owned and operated the Wright Orchards located near Middlebury for many years, succeeding his father. During recent years, in semi-retirement, he ably managed three orchards in the area for J. Norrisberg, Brooklyn, N. Y. Mr. Wright was an enthusiastic pioneer in the development of the air applied dust program for orchard pest control.

An excellent planting of apple trees last spring will long be a fitting tribute to his belief in the commercial apple industry of Vermont.—C. L. Calahan, Sec'y, Burlington.

Canadian Presents Pest Data

NEW JERSEY—Much practical information and advice was presented during the annual meeting of the New Jersey State Horticultural Society held in Atlantic City.

The Small Fruits Industry Committee made final plans for a strawberry certification program.

Dr. A. D. Pickett, Canadian Department of Agriculture, presented data on the excellent results obtained in pest control through the use of a modified spray program. His practice of biological control is being used successfully in many Nova Scotia orchards.

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An excellent report by Samuel R. Levering, of Virginia, outlined the various factors involved in fruit production. His list included depth of soil, spray materials, spray thinning, mice control, good pruning and fertilization, and control of mites. He stressed the importance of heavy yields as the prime condition for successful fruit growing.

Prune Lightly, Growers Are Told

In the peach session Dr. G. W. Schneider, of the New Jersey department of horticulture, presented facts to show that the best color and yields, in addition to earliest ripening, are the result of light pruning. Severely pruned fruit trees, he has found, did not survive drought any better than lightly pruned trees. His data on fertilization showed that the effect of various rates of nitrogen was not as pronounced as was the effect from pruning.

Dr. B. L. Rogers, of Maryland, in reporting on chemical peach thinning, offered as a suggestion, Elgetol 20 at the rate of 1 pint to 1 quart per 100 gallons of water, and NPA at the rate of 100 to 300 ppm, the higher concentration being for heavy-setting varieties.

Officers elected to head the group for the coming year are Russell M. Marlatt, fruit grower, president; Charles Maier, vegetable grower, vice-president.—*Ernest G. Christ, Sec'y, New Brunswick.*

Connecticut Elects

CONNECTICUT—New officers elected at the recent annual meeting of the Connecticut Pomological Society are: President, Robert Josephy, Blue Jay Orchards, Bethel; vice-president, Brainerd T. Peck, Bureau of Markets, Lakeville; secretary, S. P. Hollister, Storrs; treasurer, Nelson B. Cooke, Branford.

Joseph G. Pero, Manchester, was awarded the Certificate of Distinction, and the H. C. C. Miles Scholarship Certificate went to Harold A. Bishop, who is a senior at the University of Connecticut, majoring in horticulture and pomology. During vacations Harold works on the large fruit and

OHIO GROWERS ORGANIZE MARKETING GROUP

The Ohio Fruit Growers Association was voted into existence in mid December by a group of some 50 growers who met in Columbus.

While organized primarily to push the promotion and sale of Ohio apples, the fresh fruit co-operative will also help in the marketing of the state's peach crop.

Elected temporary chairman was George Downes of Magnolia, Carroll County, who headed the organizing committee under the sponsorship of the Ohio State Horticultural Society.

vegetable farm at Guilford, the B. W. Bishop and Sons Orchard, owned by his father and uncle.—*S. P. Hollister, Sec'y, Storrs.*

New Officers

ARKANSAS—Newly elected officers of Arkansas State Horticultural Society are Dr. A. F. Leach, Lowell, president; Roy Wright, Springdale, vice-president; Thomas Rothrock, Springdale, treasurer; and Earl J. Allen, Fayetteville, secretary.—*Earl J. Allen, Sec'y, Fayetteville.*

Orchard Survey

MARYLAND—According to a recent orchard survey, the planting of all peach varieties has been decreasing—except for a heavy increase in Sunhigh and Redhaven, and a smaller increase in Triagem and Early-Red-Fre—since the 1949 survey.

Apple tree plantings are all confined to the red strains of colored varieties. Golden Delicious is being planted rather heavily, with some small plantings of Summer Rambo, Northwestern Greening, Grimes, and Lodi for processing.—*A. F. Vierheller, Sec'y, College Park.*

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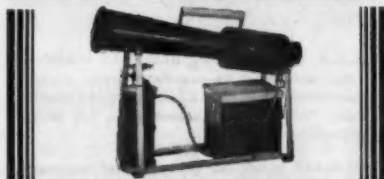
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DISEASE CONTROL

(Continued from page 14)

chards in the Cumberland-Shenandoah Valley and were a problem again in 1956 where inadequate spray programs were followed. Major differences in fungicide performance were apparent during both seasons.

In our 1955 plots, more than 95% of the fruit was diseased on trees sprayed with captan or thiram, while ferbam and glyodin gave good control. Heuberger and his co-workers in Delaware found that zineb gave excellent sooty blotch control and could be combined with captan as needed in the late season sprays. Workers in other states found lead arsenate to be effective.

Because of the importance of captan as an apple fungicide, it was decided to conduct detailed studies in 1956 on captan versus zineb in sooty blotch control. Laboratory tests showed that both materials were toxic to both the sooty blotch and the fly speck fungi.

In the orchard both materials gave nearly perfect control as long as the sprays were continued at half-month intervals. Differences between the two fungicides appeared more than five weeks after the last spray was applied. Zineb was superior because it gave a longer period of protection than that provided by captan.

Under conditions which resulted in 100% infection of unsprayed fruit, captan prevented the appearance of the two diseases for 40 days after the last spray was applied. The diseases did not appear on the zineb plots for at least 60 days after the last spray. After these intervals the diseases increased very rapidly.

The present evidence indicates that captan would be satisfactory on apples to be picked and stored not more than 35 to 40 days after the last spray. Zineb would be superior with a longer interval between the last spray and harvest. Many growers will use a mixture of captan and zineb in the last two cover sprays for control of sooty blotch, fly speck, scab, and fruit rots in 1957.

Peach Leaf Curl—This disease was more prevalent than usual in the Appalachian area in 1956. This was apparently related to the limited use of fungicides with a light crop in 1955.

Curl has been rather easy to control with dormant sprays applied before any green shows on the buds. Bordeaux mixture and lime-sulfur have been used most frequently.

Some growers are interested in using ferbam because of cost considerations, ease in mixing, and relative safety to the operator. Some

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states now recommend it at concentrations as low as 1½ pounds of the 76% wettable powder per 100 gallons of spray. Our best treatments in 1956 were Bordeaux mixture at 6-6-100 or DN paste at 1 quart or ferbam at 3 pounds. Ferbam at 2 pounds did not give adequate control. Glyodin and zineb gave poor control.

Peach Brown Rot—This disease continued to be a major problem in 1956. Limb cankers developed for several weeks after bloom. The common brown rot fungus was the only one found in cankers in this area.

Many growers now use a mixture of dichlone (Phygon XL) at ½ pound with half-strength sulfur (for example, Magnetic-70 paste at 4 pounds) in the bloom and petal fall sprays for the control of brown rot blossom blight. Tests have shown dichlone-sulfur to be much more effective than sulfur alone. An experimental polyethylene thiuram sulfide preparation was more effective than dichlone in the 1956 tests.

Cherry Leaf Spot—This disease has been increasing in some orchards for the last five years. The major problem has been the lack of adequate spray coverage in the tops and centers of the trees. Many growers now use air-blast sprayers, often with concentrated spray mixtures, that do not give adequate coverage of thick trees. Such sprayers have been practical because they save labor and time, but their use must be combined with an adequate pruning program.

Topics You Will Hear More About in 1957—Individual peach growers will be urged to do something about bacterial spot with the idea that even a poor treatment is better than no treatment. Apple growers will hear more about selecting spray chemicals for the best finish.

THE END.

FUNGICIDES AND POLLINATION

TONS of chemical fungicides have been sprayed on apple trees each season, including the bloom period, in the war against apple scab. Many fruit growers have wondered whether this flood of chemicals has had any detrimental effect on pollination and fruit sets.

Dr. Avery E. Rich has been working on this problem at the New Hampshire Experiment Station for the past two years. He reports that, on the basis of orchard and greenhouse tests, none of the five most-used fungicides—captan, dichlone, ferbam, glyodin, and sulfur—seriously reduce pollen germination or fruit set when sprayed on apple trees in bloom.

FEBRUARY, 1957

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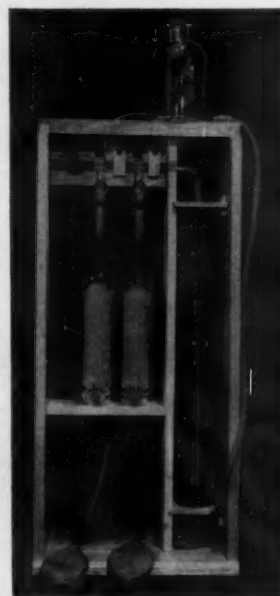


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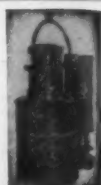
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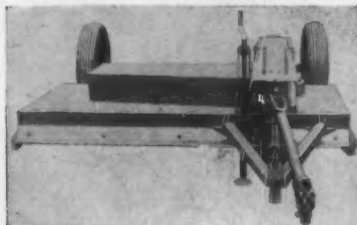
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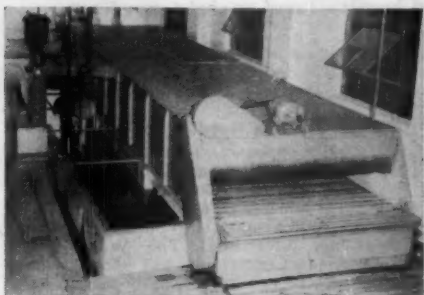
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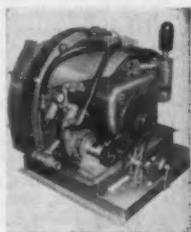
- Do-It-Yourself Sprayer
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FEBRUARY, 1957

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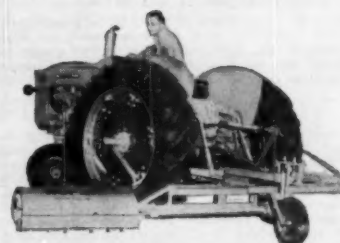
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Selma, California

Dinuba Nursery, Alta at M Street
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Stribling's Nursery, Merced, California
Merrill Supply Company, P. O. Box 877
Red Bluff, California

EASTERN APPLE COMPETITION . . . RED SPORTS . . . PRUNE PROBLEMS

These subjects were among the many topics discussed during Washington, Oregon, and Idaho horticultural society meetings

Eastern Competition Discussed

WASHINGTON—An interesting, fast-moving program featured the 52nd annual meeting of the Washington State Horticultural Association held in December at Yakima. The Capitol Theater where the meetings were held was filled to capacity, and the equipment and supplies exhibits on First Street featured over 30 commercial exhibitors plus educational displays.

Bill Luce, Yakima county agent, and Jack Batjer, of the USDA at Wenatchee, started the program with their observations on eastern apple-producing sections. Luce and Batjer told how eastern growers are going

the growing season. A few days before harvest, the decline sets in and within a few days the tree may appear practically dead.

More Promotion Needed

Harold Copple, manager of the Washington State Apple Commission, told growers that more promotion of apples is needed. More and more the trend in the big supermarkets, said Copple, is to push apples that are being advertised. The Washington State Apple Commission will back up the supermarket push with a push of its own

Walter G. Martin, Wapato, president of the Washington State Horticultural Association in 1956 and a leader in the fruit industry, was claimed in death just three weeks preceding the association's annual meeting.

in the form of newspaper ads and promotions in other media, stated Copple.

E. L. Proebsting, of the Prosser Irrigation Experiment Station, told growers that the use of nitrogen fertilizer will improve the processing quality of Elberta peaches. Fruit canned from trees of high vigor scored higher in appearance, color, flavor, and texture than fruit from trees low in vigor, Proebsting said.



Elected president of Washington State Horticultural Association for 1957 was Dr. John C. Snyder, Pullman (left), extension horticulturist. Dr. Snyder also serves as secretary of the association. Arthur C. Rich, Yakima (center) was elected first vice-president. Victor Morgan, Omaha (right), will serve as second vice-president.

aggressively after markets with fruit from young trees, well grown and well packed. It was suggested that Washington growers, to meet eastern competition, get rid of their common Delicious and older trees.

On the subject of pest control, better spray timing and coverage were suggested as the most likely answers for the control of codling moth. Codling moth may be difficult to control this coming season, Richard Bartram, Chelan county extension agent, reported. He proposed the use of five cover sprays instead of the usual two.

Roderick Sprague, plant pathologist, recommended spraying for apple mildew in 1957. He said that Karathane cover sprays applied in May kept mildew down to less than 1%.

Pear Problem

Speaking on pear decline, Dr. T. A. Merrill, head of the department of horticulture, Washington State College, said there is no answer yet to this problem. Two types of decline have been recognized. One is a slow decline characterized by little terminal growth and dropping of leaves. Trees do not always die but may continue to just get along.

A second type is quick decline, when trees may set a good crop of fruit and show fairly normal growth in the early part of

Prune Problems

IDAHO—At their two-day meeting in Boise last December, Idaho growers gave close attention to fruit production, marketing, and legislative problems.

Leif Verner, horticulturist with the University of Idaho Experiment Station, gave a report on problems with prunes. An inspection of eastern markets showed that many Idaho prunes were affected with internal browning, he said. Internal browning is a serious and consistent problem, according to Verner, whereas prune shriveling varies from year to year.

Verner also told about the prevalence of stem end rot, which is closely related to picking the fruit without stems. Clingstone prunes, he reported, hurt demand and this



Prune disorders claimed a lot of attention during the Idaho meeting. Shows examining a diseased prune root are the 1957 officers of the hort society. Left to right: Anton (Tony) Horn, Boise, secretary-treasurer; Warren Carneff, Fruitland, director; Leslie Reid, Emmett, president; Ralph Garman, Fruitland, vice-president; and D. A. Van Slyke, Wilder, director. Meeting was at Boise.

problem is related to individual trees. Another prune problem is internal gum spot which breaks through the skin allowing mold to enter.

Verner also reported that eating quality of prunes was not up to par and that quality is related to favorable or unfavorable weather during the growing season. In conclusion, he said that he felt the Italian prune, the variety most commonly grown in Idaho, is too fickle and too unstable. "We need a better variety," Verner said. "Stanley might be the answer since it is

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not affected by internal browning, but it can be so lopsided that it is difficult to pack."

A Look Into the Future

Editor Dick Meister of AMERICAN FRUIT GROWER gave growers a look into the future of the fruit industry. He told about the need for more laborsaving equipment, particularly in harvesting fruit crops. He cautioned growers to be sure to study current methods of marketing foods so that fruit marketing practices can be changed to take advantage of new opportunities. Meister said that through better marketing methods and by extending grower control over markets, it will be possible to end wild fluctuations in price, the fruit grower's No. 1 problem.

He suggested that growers combine their efforts in promoting the idea of tree foods for health. He also cautioned growers to be prepared to meet the threat of unionization of agricultural labor; and he recommended that serious thought be given to the increasing shortage of trained workers in experiment stations, colleges, and extension services.

Red Sports Claim Attention

OREGON—Truman Chase, of Eugene, was presented the coveted Hartman Cup at the banquet of the 71st annual meeting of the Oregon State Horticultural Society held in December at Corvallis. The cup is presented each year to someone selected



New officers of Oregon State Horticultural Society chosen at the 71st annual meeting are, left to right: Walter Leth, Salem, second vice-president; Orville Hamilton, Central Point, first vice-president; Ross Hukari, Hood River, president; and William Hazeltine, Parkdale, third vice-president. C. O. Rawlings, extension specialist, Corvallis, was re-elected secretary-treasurer.

for outstanding service to Oregon horticulture.

More than 700 fruit and vegetable growers and members of allied industries attended the two-day event.

Dr. Quentin Zielinski, Oregon State College research horticulturist, discussed early-coloring apples that are in demand in the fresh fruit markets. Most of the new sports color sooner but require as long a ripening season as the parent apple. Three sports of the standard Delicious—Red King, Bisbee, and Royal Red—color about four to six weeks ahead of the parent. They have apparently retained all other characteristics of the Delicious including time of blossoming and winter hardiness.

Dr. Zielinski emphasized that performance of the sports may differ between local areas and advised growers to check carefully before going into large plantings.

New Blackberry

George Waldo, OSC plant breeder, discussed the new blackberry variety, Marion, developed and released by the Oregon Experiment Station and the USDA. Yield tests in 1955 showed the variety to be a top performer, producing up to 7 tons per acre.

Plants of Marion will be available in limited quantities from co-operating growers. A list of the growers is available from Oregon Agricultural Experiment Station, Corvallis.—Harold and Lillie Larsen.

FEBRUARY, 1957

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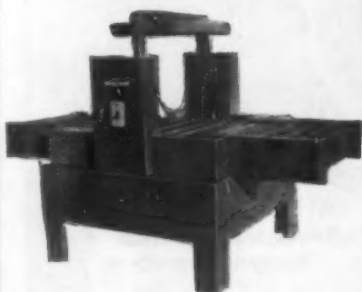
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ORCHARD INSECTS

(Continued from page 13)

chards, and the pear psylla remained a problem throughout the growing season. In recent years the pear leaf blister mite has been primarily a pest of young orchards in that area, and the pear psylla has been inactive during the hot, dry midsummer period.

On stone fruits the current spray programs are so effective that few growers are having difficulty in insect control. The oriental fruit moth was found in Oregon for the first time since 1945, although only in a limited area. Catfacing insects are of primary concern to many stone-fruit growers, but they were less serious in 1956 than in 1955.

Insects and Residues Controlled

The year 1956 was the first full year in which growers faced the problem of obtaining adequate insect control without exceeding the insecticide tolerances that became effective in July, 1955, or later. The information available indicates that fruit growers were able to meet the limitations on residues with little sacrifice in control.

In a survey conducted in apple orchards in the Ohio River Valley from northern Tennessee to northern Indiana, the USDA laboratory at Vincennes, Ind., took records of insect injury, and analyzed harvest samples for residue. Summer varieties were included as well as fall and winter varieties.

Only two of the 13 orchards surveyed had more than 10% insect-injured fruit, and in none of them was the residue of any organic insecticide found to exceed the established tolerance.

The only residues in excess of the tolerance were of lead arsenate. In one orchard in which five applications were made, the last one 47 days before harvest, the residue on one variety was on the borderline and on two varieties it was well below the tolerance. In a second orchard in which lead arsenate was included in seven applications, the last one 36 days before harvest, the tolerance was exceeded on two of the three varieties sampled.

It is evident that growers who use lead arsenate must limit it to a few essential applications or be prepared to clean their fruit.

For two or three years there have been indications that DDT is less effective in codling moth control when it is used in sprays containing captan. Residue analyses have shown that this is not due to any marked effect on the deposit of DDT. Mala-

Grape and Berry Growers

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thion, too, has not come up to expectations in some spray combinations. This development may have broad implications, especially since it does not always involve all formulations of the materials affected.

Promising New Insecticides

There is interest in new materials that are effective against a number of pests instead of those that are specific for a particular pest or type of pests.

A number of such materials were available for testing in 1956, some for the first time. One of the most interesting is Carbon and Carbide 7744 because it is neither a chlorinated nor a phosphorus compound. It was highly effective against the codling moth when freshly applied, appeared to have long residual value, and was also promising against the red-banded leaf roller and aphids. Thiodan, a nonphosphorus compound, showed some promise in control of the codling moth and the pear psylla.

Most of the promising new insecticides are phosphorus compounds, and several of them that have shown much promise for use to control aphids and mites have been found to have some value for codling moth control. These include Am. Cyanamid 12008 and Thimet, Hercules AC-528, Guthion, Trithion, Niagara 1240, and Chipman R-6199. Unfortunately most of the phosphorus compounds do not have the necessary residual value to become outstanding codling moth insecticides, but some of them may be found useful supplements to DDT or as replacements for DDT or other persistent insecticides in late-season applications to avoid excessive harvest residues.

A number of the new materials have shown promise against pests other than the codling moth, mites, and aphids. These include Phosdrin for control of aphids, mites, and the pear psylla; Guthion and Tetram for control of the unspotted tentiform leaf miner; demeton and Diazinon for the pear leaf blister mite; Guthion, Chlorthion, and Thimet for the oriental fruit moth; Guthion, Niagara 1240, Thimet, Thiodan, and Trithion for the pear psylla; and Kelthane for control of mites, particularly during the warmer part of the growing season.

Growers are naturally interested in how soon some of the promising new materials may be available to them. It is hard to say. Several years are required to obtain all the information needed to secure approved labels and tolerances, or exemption.

THE END.



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SPEED SPRAYERS, SPEED-AIR, IRON-AGE sprayer with Bea-Blo; Bean 35TR with Speed-Air; Model 48 Bean Sprayer; 150 gal. Bean sprayer; Rolla-Mulcher; Cleaner & Grader; Crates; 200 drums liquid lime sulphur; etc. CORY ORCHARDS, Cory, Indiana.

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GOOD CLEAN BURLAP BAGS. 50 x 70 inches, \$5.00 per 100, f.o.b. factory. MELLOR'S, 961 Grimm Drive, Shreveport, La.

FOR SALE: WE HAVE AVAILABLE SEVERAL good used sprayers. These have been traded in on the new Myers Concentrate Sprayers to our dealers in Ohio. Please let us know your needs. Phone: Ashland 2-1565. WATER SUPPLIES, INC., Ashland, Ohio, Distributors of Myers Power Sprayers and Water Systems. Visit the Myers Exhibit at the Horticultural Show in Cincinnati.

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PEAFOWL, PHEASANTS, GUINEAS, WILD Geese, Ducks. Thirty varieties pigeons. JOHN HASS, Bettendorf, Iowa.

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MANAGER-ASSISTANT TO BUSY OWNER. Large New Jersey apple orchard and vegetable farm. Liberal salary and bonus for the right person. Write, giving full details, age, experience, family status. AMERICAN FRUIT GROWER, Box 162, Willoughby, Ohio.

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MANAGER—ASSISTANT TO OWNER, OHIO fruit farm. No Sunday sales. Modern three-bedroom home supplied. AMERICAN FRUIT GROWER, Box 164, Willoughby, Ohio.

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BIG HATCHES GAME BIRDS AND WATER-fowls. Circular. WILL SCHADT, Goshen, Indiana.

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EDWARD MEISTER, Circulation Manager
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DWARF APPLE TREES

For Planting Next Spring

Hardy, northern grown 1-year old trees. Grafted on Malling Stocks No. II, IV, VII and IX. Guaranteed free from insect pests or plant disease. Backed by more than 100 years of Leuthardt family experience in Dwarf Fruit Trees. Send for prices. State your needs, soil conditions and varieties desired, to eliminate any possible risk in choosing proper understock.

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Now there is a new modern Non-Surgical treatment designed to permanently correct rupture. These Non-Surgical treatments are so certain, that a Lifetime Certificate of Assurance is given. Write today for our New FREE Book that gives facts that may save you painful and expensive surgery, and tells how non-surgically you may again work, live, play and love and enjoy life in the manner you desire. There is no obligation.
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NEW CARPATHIAN WALNUT

Produces large delicious thin shelled English Walnuts. Perfectly adapted for cold winters; will stand 25 below without injury. Makes a beautiful, fast-growing shade tree. Plant for shade and nuts. Details in Miller's FREE CATALOG. Also New Interlaken Seedless grape, New berries, Dwarf Fruit trees, shade and flowering trees, fruit trees of all kinds.



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25 Estate Hemlock \$15.00

Canadian Hemlock

just like those on large estates. Hardy New Hampshire grown. 18 to 24 inches. Special this month. 25 for \$15.00. 100 for \$50.00 or 500 for \$200.00. The shipment at any later date.

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STRAWBERRIES

are ideal family income projects. One-tenth acre yields 650-900 quarts. Allen's Berry Book tells best varieties and How to Grow Them. Free copy. Write today.

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NEWEST PEAR AND PEACH INTRODUCTIONS
Newest Blight-Resistant Pear Introduction, Dabney, Ayres, Hoskins, Moores. Latest U.S. D.A. Peach Introduction, Keystone, Coronet, Maygold, Redcap, Hilland. Complete line of nursery stock. Write for Free Color catalog and \$2.00 Free Bonus information.

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Tennessee Nursery Company, Box 11, Cleveland, Tenn.

COMMERCIAL Nursery Co.
Established 1900
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OVER 50 YEARS EXPERIENCE GROWING FRUIT TREES FOR COMMERCIAL ORCHARDISTS.
WRITE FOR CURRENT PRICE LIST

American-French Hybrid Grapes

Cold, heat, drought and disease resistant. The best dessert varieties from the late Emmett Schroeder Vineyard of Hutchinson, Kansas. Circular. C. A. Stoughton Vineyard, Fredonia, Kan. Route 4.

FEBRUARY, 1957

SPRAYING IN THE WEST

(Continued from page 17)

mum of 1500 gallons dilute per acre. This may be varied with concentrate, semi-concentrate, etc.

A prebloom application would consist of 1 pound parathion (25%) and 1½ pints Genite 923 per 100 gallons as late as possible compatible with the avoidance of damage to bees during bloom. This spray should handle aphids, cutworms, any early emergence of codling moth, and delay the onset of European red mite for several weeks.

Three Cover Sprays

A first cover would be applied when needed of 2 pounds DDT (50%) 1½ pounds 88R, and ½ pint TEPP. There would be a second cover 25 to 40 days later, containing 1½ pounds 10% gamma isomer Ben Hex, 1½ pounds 88R, and 1½ pounds DDT if required by codling moth infestation. A third cover in mid-August may well be required, and it would include 88R for a late build-up of some two-spot complex and .6 pint (5 pounds per gallon formulation) liquid malathion to 100 gallons of water for a good depressant on green and woolly aphids. DDT may be added again if codling moth is a problem.

The above program is a possible solution to normal problems which may appear in our spray season. Several other insecticides will solve our problems equally well. The above program is further complicated when pears are present with such pests as psylla and blister mite.

With proper coverage dozens of programs could be evolved which would raise insect and disease-free fruit.

We do most of our spraying by dilute bulk application, both with an air-blast machine and by hand, as there is less opportunity for error on a large-scale operation. We have specifically not junked our stationary spray outfits because of the superior job we can do spray-thinning by hand gun.

For the small grower who does his own work an inexpensive concentrate machine performs a complete service. We have done a fine job with the concentrate machine, but it requires much closer attention to refined details and the selection of near-perfect weather to assure excellent control.

We must be ever alert to new methods and new materials. The salvation of the fruit grower depends first on high-quality produce for the market, and in this high-cost, competitive age, a sharp eye for economies as well.

THE END.

FREE Neosho Nurseries Catalog



AGENTS WANTED

Earn money for full or part time work. Ask for particulars.

Better Fruit Trees for 40 Years!

Leading varieties of APPLE, PEACH, CHERRY, PLUM, GRAPE. Guaranteed hardy, disease resistant. Free Catalog. 48 pages of money-saving offers, fruits, roses, shade trees, ornamentals, etc.—shown in natural color. Write today.

NEOSHO NURSERIES CO. DEPT 485
Neosho, Mo.

DWARF FRUIT TREES

Ideal for home gardens, require little space, full sized fruit, begin fruiting 2nd or 3rd year. Enjoy delicious fruit from your own trees. We have dwarf peach, apple, pear and new North Star cherry. Also new grapes, berries, nut trees, fruit trees, blueberries, strawberries, shade and ornamental trees. Miller's color catalog FREE.

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545 W. Lake Road Canandaigua, N.Y.

FRUIT TREES, STRAWBERRY, RASPBERRY AND BLUEBERRY PLANTS



Nut and Shade Trees, Grape Vines, Flowering Shrubs, Evergreens, Dwarf Apple Trees (on Malling 9, 7, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100). Over 80 years experience growing and supplying complete line of nursery stock direct to planters. Satisfaction assured—price reasonable. 60-page illustrated catalog and planting guide sent free—Write.

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Write for catalog, fully describing all varieties, with best methods of growing them. Satisfaction Guaranteed.

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FREE COLOR CATALOG OF DWARF FRUIT TREES

Big Yield PEAR, APPLE, PEACH, CHERRY TREES, Plus SHRUBS, SHADE TREES, BERRY PLANTS, PERENNIALS, etc.

Get a huge harvest from small land area with these guaranteed-producing Northern-Grown dwarf peach, cherry, apple, pear trees. Choose from over a dozen varieties, all replaced FREE if they don't bear large, juicy fruit within two years. Beautiful, full-color catalog also offers hardy standard fruit trees, grapes, berry plants, flowering shrubs, perennials, fast-growing shade trees, etc., all fully guaranteed.

SAVE MONEY! Buy direct from Kelly Bros. One of America's most famous nurseries, in business for 77 years. Mail coupon for FREE catalog today. No obligation. No salesman will call.

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77 YEARS AS NURSERYMEN

Dept. AFG-2, Dansville, N.Y.

Rush me FREE the new Spring Color Catalog of guaranteed, hardy Dwarf Fruit Trees, Shrubs, Berry Plants, etc. Regular Kelly Customers: Your 1957 Catalog is on the way.

Name.....

Address.....

City.....Zone.....State.....

A Call to Leadership and to Co-operation

For want of guidance a people will fail;
But safety lies in a wealth of counsellors.

—Book of Proverbs

THOUGH not written specifically for fruit growers, this profound verse from the Book of Proverbs might well have been. It points the way prophetically to all segments of the fruit industry. It indicates that there must be leadership and guidance, and that this guidance must be controlled by the ideas and suggestions of all those who are a part. It is a call to leadership coupled with true co-operation.

Like everything else in life, the fruit industry changes. In fact, the only constant thing in life is the certainty of change. Little by little the individual becomes more and more a part of a great whole. This is not unnatural and it is not regrettable. It is the way the world is built. It is a measure of progress.

The fruit grower who pioneered into a virgin area was successful primarily because of his courage and his independence. But as more growers entered his region, as consuming population increased, as society became more complex, he found himself no longer able to survive alone.

Most fruit growers quite easily and naturally adjusted to this changing situation. They formed into local and regional societies. They helped establish the universities, colleges, and extension services that now serve them so well. Some banded together to form co-operative business associations for both buying and selling. In fact, it was the rugged pioneer in many instances who not only most easily adjusted, but who also led.

But now we come to changes which are more difficult. They are not mechanical adjustments nor changes of material objects. They are changes in philosophy, and in social and economic processes. They are changes in thinking. They are not easy to make.

Take, for example, the American heritage that extols abundance and a bountiful Thanksgiving. Our training, our thinking, and even our moral conduct have been based on production to the fullest, and we have felt good about it. But we

have forgotten that the exhortation to produce abundantly was based on need at a time when there was want and scarcity, as when the Pilgrims were starving in early New England history.

By the same token, when supplies are in excess, we must again think in terms of need. Need, in such situations, does not call for wanton overproduction but rather for conservation and adjustment to satisfy market demand.

Among other things, we need a reasonable stabilization of prices so as to avoid the violent swings of low prices one year and high prices the next. There have been and still are forces at work within the fruit industry that have no desire to see price stabilization. To put it bluntly, their selfish ends are served better by maintaining a free market from which they can profit. This is the sort of thing the writer of Proverbs was speaking of when he said, "For want of guidance a people will fail."

Leadership within the fruit industry is at work drawing growers together into organizations of sufficient size to bargain effectively with other large organizations. This is the stage at which the fruit industry now finds itself. The opportunity is bright for young, vigorous leadership, tuned to the needs of the many, banded together for strength and counsel.

Fruit Growing is Such Fun!



Fruit Talk

The notice of auction for the **Grant G. Hitchings Farms** (real estate, furnishings, machinery, and equipment) near Syracuse, N. Y., will bring nostalgic memories to those who were involved in the "clean cultivated vs. sod mulch" controversy of a generation ago.

Apples produced for cider alone in France in 1956 amounted to 126,400,000 bushels—considerably more than the entire U. S. apple production.

Water core, according to H. A. Schomer of Wenatchee, is most serious in arid and semi-arid regions, where orchards are under irrigation and receive intense sunlight. High fruit color, direct sun rays, and low temperatures (30° F.) before harvest favor the disorder.

"**Modern Commercial Fruit Growing**" is a new English publication of 384 pages, nicely illustrated, edited by R. G. W. Bush and Dr. T. Wallace, director of the Long Ashton Research Institute.

In line with greater diversity and year-round operation, **A. N. Pratt**, of Tennessee, suggests the plastic greenhouse as a successful adjunct to the development of a successful home farm marketing program.

A **Great Lakes Cherry Producers Marketing Cooperative, Inc.**, is in the making.

Says **Samuel Fraser**, of Geneseo, N. Y., in a personal letter: "Nullus in verba—freely translated, **Take nobody's word for it**—Take a look to see if it is so. Nothing can beat youth, vigor, and an ever-inquiring mind."

Dr. Fred Motz, America's foreign expert on fruits, thoughtfully sends from London a notice of the unveiling of a stone and the planting of a **Williams Bon Chretien** pear tree at Aldermaston, England, last fall in commemoration of the discovery of the original Williams (**Bartlett**) pear there, about 1770.

Sixty-two per cent of all service wholesalers surveyed by the **United Fresh Fruit and Vegetable Association** believe that eventually all produce will be sold in retail packages in some way or other.

Said **Clark W. Davis** of the **DuPont Company** to a recent FFA national convention: "A farm is one of the best places to put a good education to work. . . . In farming you probably enjoy the greatest degree of individual freedom of thought and action which remain in the world. In one sense, you are keepers of this freedom." *H.B.T.*

Coming Next Month

Fertilizer Issue

- Don't Starve Your Trees—Give Them a Balanced Diet
- How Fertilizers Saved the Florida Citrus Industry
- Latest Information on: Urea—Anhydrous Ammonia—Cyanamid—Liquid Fertilizer
- Relative Merits of Ammonium Nitrate, Sodium Nitrate, Ammonium Sulfate
- When to Lime Orchard Soils
- Mulches and Mulching
- Pointers on Bark Grafting
- The Fruit Areas of America—Idaho

**PETE,
I'LL FINISH THIS
SPRAY SCHEDULE
TONIGHT OR BUST!**



CAPTAN 50-W
with
Magnetic 70 Sulfur Paste

Stauffer Sulfur Paste is tops for use either alone or in combination with Captan in the pre-pink through blossom sprays on apples.

Magnetic 70 sticks better! It is ground finer than the finest of the wettable sulfurs. Quick setting and safe when used as recommended.

Prove Captan's superiority to yourself in your own orchard. Your nearest Stauffer Dealer has Captan and the many other Stauffer Agricultural Chemicals in stock.

**WHY STRUGGLE, SAM?
JUST WRITE
STAUFFER-CAPTAN
STRAIGHT ACROSS**

IS SCAB YOUR ONLY PROBLEM?

Then spray with CAPTAN 50-W!
Prevents scab and also provides
dependable back action.

IS IT SCAB AND POWDERY MILDEW?

Then spray with CAPTAN 50-W and
sulfur, from pre-pink through bloom.

**OR IS IT SCAB,
POWDERY MILDEW AND RUST?**

Then spray with CAPTAN 50-W,
sulfur, and ferbam or zineb.



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For Early Mites

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GENITE* EM-923

AMAZING "ONE-SHOT" MITICIDE

Thousands of Growers from coast to coast used GENITE EM-923 in 1956. And their experience confirms the results of years of experimental use. On apples, peaches, pears, plums and prunes, GENITE EM-923 is *the best answer yet* to early mite problems!

Here's why: A single application of GENITE EM-923 gives control far into summer! You get outstanding control of European red mite and clover (almond) mite. You need fewer mid-summer sprays . . . reduce

residue problems of late season sprays. Genite is virtually nontoxic to bees and other useful insects. And it goes far! Just 1½ pints make 100 gallons of full-strength spray.

Prove to yourself what a difference GENITE EM-923 can make in your crop this year. Recommended use is from pre-pink to full bloom. See your friendly Orchard Brand dealer right away, to make sure you get the supply you need.



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